The History of Civilization
Edited by C. K. OGDEN, M.A.

410
53

Language

The History of Civilization

Edited by C. K. OGDEN, M.A.

Introduction and Pre-History

*Social Organization	W. H. R. Rivers
The Earth before History	Edmond Perrier
Prehistoric Man	Jacques de Morgan
Language: A Linguistic Introduction to History	Professor J. Vendryes
A Geographical Introduction to History	Professor Lucien Febvre
Race and History	Professor E. Pittard
From Tribe to Empire	Professor A. Moret
*Life and Work in Prehistoric Times	Professor G. Renard
*Money and Monetary Policy in Early Times	A. R. Burns
*The Migration of Symbols	Donald A. Mackenzie
*The Dawn of European Civilization	Professor V. Gordon Childe
*The Aryans	Professor V. Gordon Childe

The Early Empires and Greece

The Nile and Egyptian Civilization	Professor A. Moret
Mesopotamia	Professor L. Delaporte
The Aegean Civilization	Professor G. Glotz
*Minoans, Philistines and Greeks	A. R. Burn
The Formation of the Greek People	Professor A. Jardé
*Ancient Greece at Work	Professor G. Glotz
Art in Greece	W. Deonna and A. de Ridder
Greek Thought and the Scientific Spirit (Shortly)	Professor L. Robin
The Greek City and its Institutions	Professor G. Glotz
Macedonian Imperialism	Professor P. Jouguet

Rome and Beyond the Roman Empire

Primitive Italy and Roman Imperialism	Professor Léon Homo
The Roman Spirit in Religion, Thought and Art	Professor A. Grenier
Roman Political Institutions	Professor Léon Homo
Rome the Law-Giver	Professor J. Declareuil
The Economic Life of the Ancient World	J. Toutain
The Roman World	Professor Victor Chapot
*Ancient Rome at Work	Paul Louis
Ancient Persia and Iranian Civilization	Professor Clément Huart
*A Thousand Years of the Tartars	Professor E. H. Parker
*The Life of Buddha	E. H. Thomas, D.Litt.
*The Heroic Age of India	N. K. Sidhanta
The Civilization of China	M. Granet

Middle Ages to Modern Times

*Travel and Travellers of the Middle Ages	Ed. by Professor A. P. Newton
*Chivalry	Ed. by Professor E. Prestage
*The Court of Burgundy	Otto Cartellieri
*Life and Work in Medieval Europe	Professor P. Boissonnade
*Life and Work in Modern Europe	G. Renard and G. Weulersse
*London Life in the Eighteenth Century	M. Dorothy George
*China and Europe in the Eighteenth Century	A. Reichwein

Historical Ethnology

*The Peoples of Asia	L. H. Dudley Buxton
*The Threshold of the Pacific	Dr. C. E. Fox
*The South American Indians	Professor Rafael Karsten
*The American Indian Frontier	Professor W. C. Macleod
*Death Customs	E. Bendann

Subject Histories

*The History of Medicine	C. G. Cumston, M.D.
*The History of Witchcraft	Montague Summers
*The Geography of Witchcraft	Montague Summers
*The History of Music	Cecil Gray
*History of Latin Christianity	Professor P. de Labriolle

* An asterisk indicates that the volume does not form part of the French collection "L'Évolution de l'Humanité".

A full list of the Series will be found at the end of this volume.

Language

A Linguistic Introduction to History

By
J. VENDRYES
Professor at the University of Paris

LONDON
KEGAN PAUL, TRENCH, TRUBNER & CO., LTD.
NEW YORK: ALFRED A KNOPF
1931

First Edition 1925
Reprinted (with a few corrections) 1931

Translated by
PAUL RADIN, Ph.D.
Late Associate Professor of Anthropology in the University of California

Made and Printed in Great Britain by
Percy Lund, Humphries & Co. Ltd.
3 Amen Corner, London, E.C.4
and at Bradford

FOREWORD

LANGUAGE AND MENTAL EQUIPMENT

In the Foreword to Prehistoric Man, *we said :* " *The* hand *and* language : *in these two is comprised humanity. We feel that these things should be given the premier place in this work—the things that mark the close of zoological, and the beginning of human history : one, if we may so put it, is the invention of the hand, and the other is the invention of language. In these two lies the decisive progress in practical logic and in mental logic that characterizes mankind* "[1]

It will be recalled that the fundamental thesis with which we started is that history is an essentially logical process, whose deeper significance is to be sought in the tendency of the living being to act in conformity with its nature and to amplify and develop it Our thesis, however, is to be considered here only as a control hypothesis, which first receives complete expression through the recognition and the study of those other factors which play a rôle in history and make history what it really is —a complicated and incongruous network of facts in which a purely intellectual or superficial observer may perhaps see only a mass of fortuitous events.

The preceding volume indicated the importance of the practical application of logical reasoning. It pointed out how the hand had become an instrument of incomparable value, rendering possible all the material equipment of life, and both expressing and accelerating our psychical evolution. The individual is the true initiator of progress, to which his environment can only lend stimulus and fixity of character.

Language, in a different order, is one of the most extraordinary creations that has developed in the course of human evolution ; it deserves to arrest our attention and hold it for a while. What exactly is its rôle ? What part has it played in mental development ? What are the relations between the individual and society that have led to the production and perfection of so wonderful an

---

[1] *p* vi.

instrument? These are the questions which the present volume must answer.

Our plan might have been realized in various ways. Had the present book been the work merely of a psychologist or an historian, simply a manifestation of curiosity in linguistics, its relation to the general course and the problems of "L'Évolution de l'Humanité" would perhaps have been more direct, and also more apparent. But it is the work of a philologist, writing from a definite standpoint, a man who sticks close to facts and will have no traffic with theories. He has taken occasion to proclaim this[1] attitude before, and in this book he does so again.

What he has given, and what he specifically desired to give us, was a technical study of that complex and supple instrument we call language, viewed in all the diversity of its forms and its historical transformations. With this study, the problems which language raises for historical synthesis are necessarily linked, although they are not treated explicitly and for their own sakes. M. Vendryes will not permit himself to be other than a philologist pure and simple.

It seemed to us that in the collaboration of this specialist, with his particularly broad outlook, we should secure an additional warrant for the science of history as we understand it. The experiment inaugurated by the publication of the present series may prove more successful under such conditions than if we had chosen as our collaborator a thinker with a bias in favour of our own theories.

From the point of view of synthesis, however, we must discuss to some extent the general ideas underlying M. Vendryes' excellent book.

What M. Vendryes wished to demonstrate, and what he has succeeded in demonstrating, in a forceful manner, with an admirable abundance of proofs, is that language is a natural outcome of life, and how life, having produced it, continues to "nourish" it.

The older conception of language as something either miraculously given to man or artificially created by him, has left traces on a certain school of linguistic thought which regards language as

---

[1] Bulletin de la Société francaise de Philosophie, *Feb.*, 1912, *pp.* 69-71.

something independent and transcendent, and attributes an inner necessity to its laws: not only to phonetic laws or those of pronunciation, connected with the speech organs, but to the morphological laws bearing upon grammar, and the semantic laws relating to vocabulary, although "it is quite wrong to think of language as an ideal entity, evolving independently of men and pursuing its own ends."[1] *The truth is, language is closely connected with our psychic life, and from the beginning it is only psychology in action.*

M. Vendryes declares the problem of the origin of language to be outside the sphere of philology, and he contents himself with advancing only most cautious suggestions on this subject. The problem is indeed a psychological one, and it is no more possible to give an historical *account of the origin of language than of the origin of the hand. In fact, we cannot properly speak of origins in this case at all, because language was not something ready made in which an act of creation was involved, but is a series of modifications for human needs, of a phenomenon which occurred among the animals. Language in the strictly limited sense of the word, that is, auditory language—which is only a specialized form of the faculty of producing signs—exists among animals,*[2] *which express their effective states by sounds, and it is unquestionably from the cries into which these emotions have been spontaneously translated that language has sprung. Perhaps, as has been suggested,*[3] *the calmer sensations and more temperate feelings produced articulate sounds, while the cry corresponded to violent emotions. But language must have been primarily affective, and in large measure it remains affective, in close relation to the individual and individual contingencies. This, M. Vendryes has incontestably established in his penetrating and brilliant study. He shows the initial stages of affective language in the cries of the child; and then proceeds to demonstrate in the spoken language the existence of the spontaneity that always "surrounds and colours" every expression of thought, and renders grammar unstable.*[4]

---

[1] *Vendryes, p.* 360. *Cf. Couturat,* Bull. de la Soc. fr. de Phil., *Feb.* 1912, *p.* 54; *May,* 1913, *p.* 140.

[2] *Ribot,* L'évolution des idées generales, *p.* 66.

[3] *Cornejo,* Sociologie générale, *vol. i, pp.* 24–5.

[4] *Cf. pp.* 138, 145, 147–8, 153. *On the establishment of language and the rôle of sentiments before the intellectual stage, cf. some interesting remarks made by August Comte. Cf. also Aug. Georges,* Essai sur le système psychologique d'A. Comte, *p.* 32.

At an early period, side by side with affective language, "active" language must have arisen, as soon as the cry ceased to be the mere translation of an emotional state and became a means of action, appeal, supplication, or command.[1] *This was an important phase in the history of language; and the need of self-preservation, maintaining life, of gaining a fuller life by co-operation with, or utilization of, others, has here played the principal part. "The living being must ever be concerned with preserving his own life, protecting it against dangerous influences, and extending his power over other living creatures around him." Pierre Janet, who in his psychological work has thrown so much light upon this type of action, which we might call effectiveness, considers language an effective form of activity; and he regards "the behaviour of the man speaking and the man spoken to as having sprung from attitudes of command and obedience that already existed in the animal."*[2] *Speech and mimicry were at first closely associated, but auditory language triumphed on account of its practical superiority; and just as external speech led to outward activity, so did inner language express itself in the will, and manifest itself in belief and desire. It became increasingly immanent in all human activity.*

The final step in the development of real human language occurred when the sound was recognized as a sign, when the spontaneous act which created the useful sign was generally completed by the will which adopted it. This progress, originally of an entirely practical nature and directly serving the purposes of life, was capable of unlimited psychic enrichment.[3] *Unquestionably, in order that sound could be dissociated from the reflex action with which it was originally connected, the memory must have been already developed, and in order that the relation of the sign to the thing signified might be established (for things in themselves* signified *nothing) consciousness must have become fully awake. But consciousness had increased notably, and particularly in strength and flexibility, when it could make use of symbols that fixed the images representing objects. The use of the symbol enabled man to attain the concept more easily, inasmuch as he*

---

[1] *Cf. Cornejo, ibid., p. 23.*

[2] *Cf. Janet, "La Tension psychologique, ses degrés, ses oscillations,"* published in the British Journal of Psychology, *Oct.,* 1920–*Jan.,* 1921. *Ribot, ibid., p.* 52.

[3] *For the definite limitation of concepts associated with the movements of the hand, cf. H. Wallon, "La conscience et la conscience du moi,"* in the Journal de Psychologie, *Jan.,* 1921, *p.* 61.

could make it even more independent of direct perception by transmitting it to another brain. Nascent intelligence gradually made language a special instrument, the organ of thought, permitting thought to be exercised without having any immediate relation to the function of the real.[1] *Words, by their representative and communicable value, possess the same practical utility as paper currency, but they are equally dangerous in so far as they may have no real counterparts, and can thus become a* flatus vocis, *purely imaginary entities.*[2]

Language, which is born of life, necessity, and desire, develops primarily through synthesis. M. Vendryes shows that thought, a stranger to grammatical classification, begins by being poured in its molten state into language. The verbal image or the phonetic word, just because language is originally an action, possesses the value of a sentence; nouns, representing objects and their properties, verbs, representing states, and grammatical auxiliaries, indicating relations, are all derived from them. The sentence precedes the grammatical word, and the word precedes the syllable.

Language thus remains subordinated to life "with all its infinite development." Nothing is more interesting than to observe, with M. Vendryes, the variety and often the clumsiness of the methods used to translate the connexions which one perceives in the world of reality—the extreme instability of a vocabulary, the tendency of language to continual diversification and unlimited growth among the human beings who use it to express the more personal aspect of their own life. Written language—even that of the great writers, which might well have some claim to set a fixed standard for this instrument, by reason of the perfection it gives—cannot arrest "the indomitable force of life triumphing over rule, and breaking the fetters of tradition."[3] *Whatever some may argue, assuredly words do not live; it is the mind that lives and changes their meaning, just as it is the intellectual life that changes and renews the names of things. "Hence, it is not altogether unreasonable, after all, to claim that there are as many languages as there are individuals."*[4]

---

[1] *An expression of Janet's. Cf. a curious note by L. Dupuis, in the* Journal de Psychologie, *June, 1921, "La mémoire des noms propres et la fonction du réel."*

[2] *Cf. Ribot, ibid. p.* 125. *Cf. also p.* xii.

[3] *p.* 275.

[4] *Cf. pp.* 213-5.

M. Vendryes, therefore, lays special stress on the contingent character of language. But his knowledge of his subject is too complete, and his sense of reality too strong, not to induce him to place himself at another angle whence another point of view is possible. There are as many varieties in language as there are speakers. For all that, there are languages*—standard or common languages, special languages—and there is* language*. "The tendency towards unification is always at work against the tendency towards differentiation, and equilibrium is re-established."*[1] *Linguistics, therefore, discloses uniformities varying from the "general" to the special.*

These uniformities M. Vendryes considers as being essentially the work of society. If he mistrusts theories and deals warily in his book with the part played by generalization, we feel that he lays great stress upon sociology, a certain type of sociology whose merits we have ourselves weighed and discussed,[2] *and that he is inclined to let the term "social" satisfy that need for explanation which manifests itself in him from time to time in a more or less restrained form. In this emphasis upon the social he is in agreement, moreover, with certain other linguists—among them a very eminent scholar—who, without positively belonging to the school of Durkheim, nevertheless felt the seduction of that powerful and subtle mind.*[3]

If "it is a truism to-day to state that man is primarily a social animal",[4] *it is nevertheless still necessary to define what it is that gives him this essential character, and to distinguish in him the truly* social *element from the* human*. These elements M. Vendryes does not attempt to differentiate.*[5] *We find, even in his work, however, the accuracy and reserve that are characteristic of his sociology; so much more definite and sure is to him the appeal of direct experience of linguistic facts than any hankering after theory.*

Our own view, withal, is that the following distinction claims attention before all else.

---

[1] *p.* 244.

[2] *Cf.* La Synthèse en Histoire, *pp.* 124-7.

[3] *Beginning with Vol.* I *(1902), M. Meillet has been in charge of the section on language in* L'Année Sociologique.

[4] *p.* 239.

[5] *Just as, in the posthumous work of F. de Saussure,* Cours de linguistique générale, *"the social forces," the "collective psychology", and the "historic factors" upon which language depends are not clearly distinguished. Cf. especially pp.* 107, 110, 115

Society, qua society, has a life of its own which embrace surpasses, and enriches the life of the individual; its specifi needs manifest themselves in necessary institutions, where individuals find solidarity in differentiation. A collective entity, a nation, has a character of its own which bestows upon individuals contingent resemblances.[1]

The character of a nation—much more so the particular features of the more or less durable secondary groupings within it—reflecting itself in the standard language, and in the dialects and special languages, introduces contingencies of all sorts which have nothing to do with the "social organism" or "social division". It has even been said that the spiritual "patrie" of the mind is in language. But the patrie is a very different thing from society.

M. Vendryes, who justly criticizes the introduction into linguistics of the concept of race, also objects to the notion of an ethnic mentality. He was obliged to recognize, however, that there is some relation between the mentality of a people and their language.[2] "We can imagine a psychology of peoples based upon the examination of divers semantic changes attested in the languages they speak. This study would call for considerable subtlety of mind, but it would be worth while attempting."[3]

There are, indeed, abstract and concrete languages which correspond to contrasting ethnic mentalities. Nothing is more striking in this connexion than the notes of M. Granet on "Some Peculiarities of Chinese Thought and Language", published in the Revue philosophique.[4] He shows that "the study of Chinese vocabulary indicates the extraordinarily concrete nature of Chinese concepts". "Almost all the words connote singular ideas, representing apperceptions which are as highly specialized as they can possibly be, and what this vocabulary expresses is not the needs of a mentality that classifies, abstracts, and generalizes, and which aims at working upon clear-cut, distinct facts, prepared for logical organization: it shows, on the contrary, just the opposite tendency, the dominant desire for specification, particularization, the picturesque . . . As they appear to us and as the Chinese explain them, the words of their vocabulary seem to correspond to conceptual images tended, on the one hand, to sounds that appear to be endowed with the power of evoking the characteristic details of an image, and, on the other hand, to signs that represent the gesture which is noted by the motor memory as essential."[1]

---

[1] On this form of contingency cf. La Synthèse en Histoire, pp. 69 ff.

[2] p. 238.

[3] p. 209.

[4] Jan.-Feb., and Mar.-April, 1920.

This factor of ethnic psychology is not the only contingency of general application conditioning language. "Linguistic evolution is directly dependent upon historical *circumstances."[2] It depends upon habitat, the kind of life led, and the manner in which the lives of different nations are interwoven.[3] But as we have just seen, the features which affect a group or an entire nation are not necessarily social in origin. The term "historic" is here both apt and correct.*

Among those influences which it registers like some sensitive instrument, vocabulary is affected by social facts, properly so called. M. Meillet has brilliantly demonstrated this point: "The principle involved in the majority of changes of meaning is to be sought in the division of the speakers into various social groups and in the passage of the words from one social group to another."[4] But in the measure in which it reflects, *like historical conditions, the "social conditions" of the life of the people, can language truly be called social? We do not think so.*

Language is truly social, according to our view, only when it is a creation of society, an institution inherent in society. "It is in the bosom of society," M. Vendryes states definitely, "that language is formed. Language is thus the social fact par excellence, *the result of social contact."[5] There lies the fundamental problem; what is the rôle of society as such, in the creation and development of language?*

With respect to the formation of language M. Vendryes has recognized that a psychological operation is involved from the outset; that two human beings are capable of creating a language only because they are potentially prepared to do so, and that furthermore, language sends its roots "deep into the consciousness of each one of us; thence it is", he says, "that it draws the

---

[1] *Ibid.*, *pp.* 101, 114.

[2] *p.* 353.

[3] *pp.* 335, 287. *Cf. Cornejo,* Sociologie générale, p. 66.

[4] Année Sociologique, xi, *p.* 791; *and on this point see also ibid.*, x, *p.* 810, vii, *p.* 676; viii, *p.* 643; ix, *pp.* 15 *ff.*; xii, *p.* 850.

[5] *p.* 11.

sustenance enabling it to blossom in speech.” [1] *If, therefore, in stressing the action of society, as he has done in many passages, he merely wishes to point out what resources social organization might find in this means of communication between men, and how the “adaptation” of the human faculties to social needs* [2] *has brought about the progress of society and language at the same time, we can but agree with him.*

Society has indeed utilized language. It has exercised—we will not say constraint,[3] *but pressure, in order to perfect it and make it practical. It has even in various ways* institutionalized *it, for we must draw a distinction between fundamental and secondary institutions.*[4] *Language, in our opinion, however, was originally a factor rather than a product of society. With the hand, language has been responsible for the scope of society. Association is the closer as differentiation increases, and differentiation itself owes as much to language as to the hand.*

M. Vendryes, however, does not limit the rôle of society to a stimulating action. After saying that “language does not exist apart from the people who think and speak it; its roots go deep into the consciousness of each one of us”; he adds “but personal consciousness is only one of the elements of the collective consciousness whose laws are imposed upon every individual.” [5] *As an instrument of thought and an intellectual organ, language, according to numerous passages in his book, is a real social creation. “Émile Durkheim attributed the existence of categories to a sort of necessity which is to intellectual life what moral obligation is to the will, that is to say, categories are of social origin, and dependent upon society.”* [6] *M. Vendryes accepts this idea of the Durkheim school, as illustrated by M. Lévy-Bruhl in his book* Les Fonctions mentales dans les sociétés inférieures.

This brings us to the very heart of a question which possesses a paramount importance in history; namely, the part played by society in building up logic.

---

[1] *Cf. pp.* 1, 7, 11, 14, 360.

[2] *Cf., for example, in* L'Année Sociologique, *M. Mauss, iv, p.* 141 (*language “is obligatory for all the members of a given society, and exists, so to speak, outside individuals”*), *A. Meillet, ix, p.* 2 (*“the characters of exteriority to the individual and that of coercion, by means of which M. Durkheim defines the social fact, appeared . . . definitely proven by language”*).

[3] *p.* 14.

[4] *Cf.* La Synthèse en Histoire, *p.* 133.

[5] *p.* 360.

[6] *p.* 113.

We believe, for our part, that thought continues life: that practical thought, more or less conscious, precedes theoretical thought; that language, which aids practical thought, and which alone permits the progress of theoretic thought, thoroughly expresses human nature. It is man as such who is the creator of intellectual as well as practical logic. In classifying objects and their mutual relations, it is he himself who is interpreted by thought and language—both intimately connected. It cannot be society that creates the logical categories; society has needs but it does not think. *If there are in language uniformities of a different import from those due to transmission, individual circumstances and imitation, their cause lies in the initial identity of the representative life among all human beings.*[1]

In the Foreword to Vol. II of this series we spoke of the hand's contribution to the development of the psychic life. To this ever-increasing "intelligent" use of the hand, there is a corresponding progress in psychic synthesis and inner clarification.[2]

Not only has the hand facilitated the co-operation of human beings by its functional differentiation, but it has also contributed enormously to our knowledge of the external world. For knowledge of an entirely practical nature, and founded upon interest and resulting from tendency, is contemporaneous with life. Adaptation is knowledge. There is a knowledge of reality that finds its material expression in every organism, a kind of mechanics and physics in action, in the exercise of muscular energies. "Before it had been actually conceived, the law of causality was felt *more and more through the unfolding of human activity in a world dominated by this law, of which man is an integral part."*

But thought *and the higher forms of psychic activity are bound up with language. Among the Greeks, as Cournot observed, the same word λόγος expressed both language and reason. Language is a double-edged implement; an instrument for communication and for registration which, through abstraction and generalization, fixes knowledge within concepts, and then permits an indefinite development.*

Not that the faculty of abstraction and generalization is awakened by means of language alone. Attention and memory play their

---

[1] *Cf. the interesting reflections of D. Parodi in the* Bull. de la Soc. fr. de Phil., *Feb.-Mar., 1914, pp. 90-91.*

[2] *Cf. pp. i x.*

rôle apart from language—under the influence of tendency Homo alalus, like the animals, derived his perceptions from indefinable and confused sensations. These perceptions are the result of selection. Of all sensations "those with the greater practical interest are greatly favoured,"[1] *and attract* attention. *Memory, moreover, enriches the impressions which it has received from representations drawn from former experiences. In this way certain salient features become detached from objects, features common to a group of objects.*[2] *Within this early representative life, individual and subordinated to interest, generic images are formed, a complete, practical equipment like the material equipment whose tendency it is to appropriate the objects for consciousness, and to dominate them; and this is the humble germ of theoretical knowledge.*

Language, at first emotional and active, and then synthetic, according as it is differentiated in order to distinguish objects, properties, and states, rendered more supple in order to give expression to the most varied relations of reality by means of words, devoid of their particular meaning which, however, take on an abstract and general value as grammatical tools, gradually develops an unheard-of power and constitutes in function *the faculty of discriminating between like and unlike, through abstraction and generalization, and this faculty is as immanent in life as are feelings of pleasure and pain. Language thus enables us to secure "a more penetrating and extended grasp upon things".*

It is because man is homo faber, *but even more because he is* homo loquens, *that he is* Homo Sapiens. *It seems as if the development of language had closely followed that of the human artefacts. According to Boule* Homo Heidelbergensis *was probably intermediate between human beings who speak, and animals who utter cries:* Homo Neanderthalensis *unquestionably possessed already the faint rudiments of articulate speech.*[3]

That the transition from the generic image to the pure concept was exceedingly gradual goes without saying. The word at first played but a "sorry rôle". As an abstract symbol it raised itself

---

[1] *Ebbinghaus,* Précis de Psychologie, p. 159. *Cf. Ribot, ibid., p. 9.*

[2] *In the most recent psychology of attention we find emphasized the rôle played by schemes, or impoverished images possessing an entirely individual character, and which are of "non-social origin". Cf. Revault d'Allonnes, "Les formes supérieures de l'attention" in the* Journal de Psychologie, *p.* 232.

[3] *Boule,* Les Hommes fossiles, *pp.* 154, 237.

to a sufficient degree of abstraction to subsume characteristics that were the most difficult to recognize, and of the most general type. It gave fixity to the ideas most rich in "potential knowledge"—number, space, time, cause, law, species. "The word passed from nothingness to complete autonomy; the concrete from the fullness of being to nothingness." [1]

And it also goes without saying that society has played a decisive rôle here, too—although an indirect one. The word rendered the concept communicable from one brain to another; society favoured and quickened the contribution of meanings, intellectual "capitalization." But this logical co-operation, although it took place within society, is not for that reason necessarily a social phenomenon. It should be remembered, on the contrary, that the word, by placing the individual understanding at the service of society, enabled the latter to obtain a more clear-cut consciousness of its specific needs, and to develop rationally.

The aptitude for abstraction and generalization, which is proper to man alone, and develops with the reasoning process, is unequal among men. Inventors, for instance, are those people who are "born with a talent or genius for abstraction",[2] *and this aptitude for abstraction, at first purely practical, in the case of inventors, becomes more and more theoretical by reason of accumulated resources, and by the spontaneous exercise and play of intellectual faculties. At the same time, the initial need, the human* interest *or concern in the practical aspect, does not disappear. What we would stress is that not only is there a practical activity which persists and which at certain moments even acquires an incomparable importance and force,*[3] *but that the most speculative type of activity is ultimately directed, at bottom—according to our postulate—to one hidden end and final purpose, the conquest of things and the liberation of the spirit, towards the apotheosis of humanity. Science is a "vital instrument" even under its apparently least "efficient" form, and, indeed, especially under this form. "If man triumphs daily over nature, whereas animals have to go on fighting the same unequal battle without a decision, it is because man is able to look upon the world objectively. The animal's too practical intelligence has made him the slave of his perceptions, which almost always produce the same automatic*

---

[1] *Ribot, ibid., pp.* 100, 116, 148.

[2] *Ribot, ibid., p.* 246.

[3] *Cf. L. Weber,* Le rythme du progrès.

reactions The most disinterested search for truth is the most intelligent pursuit of interest.[1]

The last volumes in this series will indicate the rôle that writing and printing have played in the investigation of truth—both of which, like language, represent the sum of innumerable inventions, imitated, transmitted, and socialized Writing created speaking objects. *Printing multiplied them and made them permanent. Space, time, and death were conquered by thought*[2]

Often, it is true, speculative thought has fallen into the chimerical, into aberration. Thought then moves within the "uncreated world of the age of primitive man", the world of ideas—which is, at the same time, the world of words. And the word, with all its advantages, also possesses certain disadvantages. Since, in principle, it is derived from things, and represents things,[3] *man has naturally come to think that some reality corresponds to every word, and from this has arisen the belief in idols and in entities that have been endowed with reality. As certain words produce definite effects, it was natural to believe that every word possessed that virtue. "The man who calls to his companion at a distance, and sees him run towards him in response to his call, has let loose a force very different from the material force produced by a missile or projectile." There is certainly some truth in this idea of Weber's—that speech has contributed toward the production of the notion of an efficient cause which is quite distinct from that we owe to the exercise of various kinds of material technique*

The type of mentality that makes arbitrary use of words has been called "prelogical" and it has been described as entirely social in origin.[4] *However, it seems to us in reality to be derived from the affective life of the individual ; but it is maintained and developed by the social life which is originally in large measure affective, and which, by reinforcing the emotional states of the individual, creates a kind of mystical environment, closed more*

---

[1] *Cf D. Roustan, "La Science comme instrument vital," in* Revue de Mét. et de Mor., *Sept*, 1914, *pp.* 612–43.

[2] *Cf. Cournot,* Essai sur le fondement de nos connaissances, *p.* 317 , *Lacombe,* L'histoire considérée comme science, *pp.* 197 *ff.* ; *de Majewski,* La Science de la civilisation, *p.* 242.

[3] *It even seems to retain a little of the reality of the thing whence certain magical practices. Cf. Weber, ibid., p.* 92 ; *also* Bull. de la Soc. fr. de Philosophie, *pp.* 74–5 ; *Ribot, ibid., p.* 108.

[4] *Cf. Lévy-Bruhl, op. cit., Vendryes, pp* 99, 316–18 *Granet, articles cited Mar.-April,* 1920, *p.* 187 ; La Synthèse en Histoire, *pp.* 195 *ff.*

or less to experience. It is in speech that thought first becomes consolidated—too, so much perhaps—and reigns as logic, and that a "verbal technique" develops parallel to material technique. Social authority, when substituted for the control of external reality, more or less paralyses reason by institutionalising thought. Then when reason, at any given moment, liberates itself and grows stronger, it retains for a long time an excessive confidence in illusory constructions and verbal castle-building.[1]

In order that the mind may fruitfully operate with words, concepts must remain charged with actual reality. The ideal in all its forms, springs from language, but there are false and hollow ideals. In the long run reason, through its logical strivings, assimilates objects to the mind and thereby at the same time assimilates minds to one another. A definitive society rests undoubtedly upon the union of different minds, and it can truly be said that science "has never rendered greater social service than it has done since its liberation from all authority, even from all social discipline, in order to become essentially objective, that is to say, both individual and universal, yet not social, which is an entirely different thing."[2]

Animated discussions on the logic and the progress of language, in which M. Vendryes likewise participated, took place in 1912 and 1913 in the Société française de Philosophie. The occasion and the basis of discussion were the interesting works of the late and much regretted Louis Couturat, animated as they were by such profound conviction. Couturat was working for the realisation of an international language, to be imposed on all peoples and all minds, for this, he opined, is the end to which all the deeper tendencies of linguistic evolution are verging. He firmly believed that human thought and language are intimately connected, and combining a sound understanding of logic with a very well informed curiosity in the facts of linguistics, he based his endeavours especially upon the works of Meillet, the most philosophical of linguists—remarkable both for their breadth of knowledge and the import of their conclusions—in order to demonstrate that certain fundamental "categories" could be obtained from the comparative study of all human languages. There is a "general grammar" because there is a general human intelligence. "Man is not

---

[1] *Ibid.*, pp. 188-263; Weber, Ribot, Janet, *op. cit.*

[2] Belot, Bull. de la Soc. fr. de Philosophie, *Feb.-Mar.*, 1914, p. 131. *Cf.* Lalande, *ibid.*, *June*, 1916 ("*Les fonctions de la raison*"), p. 141.

rational because he is a social or political animal as Aristotle said. he is a social animal because he is rational. [1]

Let us try to define M. Vendryes' attitude in the discussions relating to the categories and see how, on this point, his outlined sociology is tempered and restrained by the actual facts, till it nears the position of Durkheim himself, in his strongly assertive books, and of Lévy-Bruhl.[2]

"This conception of the human mind, ruled everywhere by the same immutable laws," seems to him—rightly enough—debatable; but he declares that "whatever may be the difference between the mental habits of different peoples, the existence of certain fundamental traits is undeniable", and he then leaves it to the logicians to decide whether "behind the medley of grammatical categories there are logical ones, valid for, and imposed upon, all languages by the structure of the human brain" [3]

So far as origins are concerned, he brings together all the possible objections against the attempts made to reduce languages to a common unity, and is extremely reserved in his judgment as to the results of the comparative method However, he recognizes that "philologists have succeeded in classifying languages into families". "It is not to be doubted," he adds, "that the progress of comparative philology will eventually increase the number of linguistic families duly established." [4]

With regard to evolution, he says "we profit by the intellectual gropings of our distant ancestors, who facilitated our task by preparing human mentality for it" How much time and effort must have been expended in exercising the brain, he continues, until it could perform its task almost mechanically.[5] *In spite of the mysticism with which "his mind is soaked through and through" M Vendryes recognizes in it a "rational element" developing step by step and finally triumphing*[6] *And he shows very forcefully what direction the progress of language has taken.*

---

[1] *Cf. L. Couturat, "La logique et la philosophie contemporaine," in the* Rev de Met. et de Mor, *May,* 1909; *"Sur la structure logique du langage," ibid Jan.,* 1912. *Cf* Bull. de la Soc. fr. de Phil., *Feb.,* 1912, *May,* 1913. *Cf. also Lalande, "L'œuvre de Louis Couturat" in the* Rev. de Met et de Mor, *Sept.,* 1914.

[2] *Cf.* La Synthèse en Histoire, *p* 174, *and* Bull de la Soc. fr. de Phil., *Feb* 1912, *p* 66.

[3] *p.* 113; *cf p.* 209.

[4] *p.* 311.

[5] *p.* 316. *Cf* La Synthese en Histoire, *pp* 191–5

[6] *pp.* 318–19.

It has proceeded from the concrete to the abstract, from the mystic to the rational. The languages of savages are replete with concrete and particular categories; those of civilized people have hardly any, while abstract and general categories are ever on the increase. The notion of time, which is a higher degree of abstraction than space, plays a greater rôle among the languages of civilized people than among those of savages.[1] In the case of the individual, when memory begins to break down, "the abstract has a greater holding power than the concrete. This is doubtless to be explained by the fact that an abstraction penetrates the mind by an intellectual effort, and requires some definite mental intention; whereas the concrete is simply a reflexion of objects in the mirror of consciousness."[2]

To insist that the evolution of language is intimately related with civilization is not to belittle logical effort or the rôle of the human factor, but it does restrict the rôle of the social factor. The concept of civilization is quite distinct from that of society.

Moreover, what precisely is civilization? Is there, arising out of civilization, a hierarchy or progress in language? M. Vendryes goes far in his scepticism, which deserves the greatest respect, because it arises from an acute sense of the details, so disparate and so inconstant, of linguistic reality, and from a contempt for preconceived ideas put forward as a knowledge of authentic facts. From the exclusively empirical viewpoint of the linguist, he insists upon the differences in grammatical categories in the various languages, upon the obstacles encountered by logic, and upon the chimerical nature of an artificial language. He goes so far as to say: "We have no right to consider a rational and abstract language, because it happens to be our own, as in any way superior to a mystical concrete one. It is entirely a question of two different types of mentalities, each of which may have its merits. There is nothing to prove that in the eyes of an inhabitant of Sirius the civilized person's mentality does not represent degeneration."[3]

Once again, this hyperbole of scientific doubt in the work of M. Vendryes is pleasing to us; it seems to give a definite value not only to his particular work, but to the work as a whole which he has honoured by contributing to it. Our theses, which we do

---

[1] *pp.* 356-9.
[2] *p.* 135.
[3] *p.* 359.

not thrust upon anyone but merely suggested, are thus confirme by him And we believe that in spite of certain appearances to the contrary, and without M. Vendryes having designed it (this precisely constitutes the experiment), *they will be found to b strengthened rather than weakened.*

The problem of progress is a complex one, and the " values " that go to make up civilization are difficult to determine Th work as a whole must attempt some solution of this problem

We have now seen how many general questions are raised by M. Vendryes' book, and what valuable suggestions he furnishes towards solving them. So far as special problems are concerned, they are all indicated and treated seriously and fully in chapters specifically designed to show both the results obtained and the research desirable. A special chapter on this subject is not necessary, since the book, as it has been conceived, constitutes a complete inventory of the work done, and still to be done.

During the discussions, already referred to, of the Société de Philosophie, a wish was expressed that Louis Couturat might summarize in an " accessible and up-to-date volume " the existing data on the subject of linguistics. In a note at the end of the Bulletin *for May,* 1913, *however, we read : " M. Couturat has given up, at least provisionally, the suggested project of a manual on the logic of language . . because he has been informed that Professor Vendryes is preparing a work on language which will probably supply the desiderata and the needs of teachers of philosophy "*

This is the book in question. It will be useful both to linguists and to all who in any other capacity are interested in linguistics But perhaps its greater utility will consist in pointing out, in connexion with the series in which it appears, that philology is not a science distinct in itself, but can be incorporated in history. Life and thought flow together in language. Dead languages are like fossils which preserve the imprints of the living creature Living languages express in changeable forms, recorded, nevertheless, in texts, all the inner workings and external influences of life, both individual and collective. Just as the philologist has need of history, so has the historian need of philology—if he conceives history not as a pure and simple account of that which has been, *but as the more profound interpretation of life in its infinite complexity.*[1]

HENRI BERR.

---

[1] *No historian has understood the importance of this better than Lucien Febvre. Cf. the* Revue de Synthèse historique, *vol. xxiii, Oct., 1911, "Histoire et Linguistique"; vol. xxvii, Aug.-Oct., 1913, "Le développement des langues et l'Histoire."*

N.B.—We believe the following work will prove a useful supplement, from the psychological standpoint, to the bibliography of this volume. The Traité de Psychologie, *in preparation by a group of French writers, under the editorship of G. Dumas—will contain two articles on language (I, "Le langage: la fonction sensitivo-motrice," by Barat and Chaslin; II, "Le langage: la fonction intellectuelle," by Delacroix). The* Journal de Psychologie, *directed by P. Janet and G. Dumas, will shortly publish a special number devoted to language.*

CONTENTS

CHAP PAGE

Foreword by Henri Berr . . . . . VII–XXIV

Preface 1–4

INTRODUCTION

THE ORIGIN OF LANGUAGE . . . 5–16

The problem of the origin of language outside the scope of philology belongs properly to man's primitive history. Language as a system of signals between human beings presupposes a certain stage of psychological and social evolution accomplished.

PART I · SOUNDS

I THE SOUND MECHANISMS 17–33

A physiological classification of the sounds the human vocal apparatus can produce, and an indication of their nature.

II. THE PHONETIC SYSTEM AND ITS MUTATIONS . 34–51

The sounds each speaker makes constitute a system whose elements are unconsciously transformed in a regular and absolute way. Phonetic laws and tendencies. Modifications due to evolution and those due to substitution.

III. THE PHONETIC WORD AND VERBAL IMAGES . 52–70

The different elements that go to make up the phonetic word; their mutual reactions. The verbal image and the sentence. Casualties and irregularities to which the realization of the verbal image is subject.

PART II: GRAMMAR

CHAP. PAGE

I. WORDS AND MORPHEMES . 73-84

The distinction between morphemes and semantemes. Different kinds of morphemes as determined by their nature, position, and connecting link with semantemes. "Word" impossible to define without regard to morphological variety

II. GRAMMATICAL CATEGORIES . . . 85-114

Gender, Number, Tense, Voice. Relativity of grammatical categories and difficulties of reconciling grammar and logic

III. DIFFERENT KINDS OF WORDS 115-136

A criticism of the accepted classification of the parts of speech. The noun as opposed to the verb, and vice versa. Attempted logical classification based on the respective analyses of substantive and verbal sentences. Suggested psychological classification.

IV. AFFECTIVE LANGUAGE 137-154

Importance of affectivity in language. Its linguistic means of expression. Word-order. Relation of affective to grammatical language

V. MORPHOLOGICAL MUTATIONS . . 155-171

General nature of morphological evolution. Tendency toward uniformity and workings of analogy. Tendency toward expressiveness and the transformation of independent words into grammatical instruments.

PART III: VOCABULARY

I. THE NATURE AND EXTENT OF VOCABULARIES 175-191

Etymology. Particular and immediate value of words as spoken. How words are grouped in the mind Word symbolism. Impossibility of determining the number of words in any vocabulary.

HOW THE MEANING OF WORDS IS MODIFIED . 192

The life of words, and polysemia. Meanings modified by specialization and generalization. A semantic science ?

HOW THE TERMS THAT EXPRESS IDEAS ARE CHANGED 212

Phonetic wear-and-tear, and exhaustion of word meanings. Taboos and euphemisms. Social causes of vocabulary modifications How new words are coined.

PART IV: THE STRUCTURE OF LANGUAGES

LANGUAGE AND LANGUAGES . . 233

A language must be defined independently of race and individual mentality, as the ideal form of language imposed on all the individuals of one group. The variety of languages; a reflexion of complex social inter-relations.

DIALECTS AND SPECIALIZED LANGUAGES . 245

Definition of a dialect; isoglossal lines and dialectal boundaries. Definition of a special language; slang and religious phraseology.

STANDARD OR COMMON LANGUAGES . . 260

Standard languages born of the tendency to uniformity. Different ways in which a common language is arrived at. Inter-relations of common languages and of standard languages and their dialects

CHAP

IV. THE MUTUAL INFLUENCE OF LANGUAGES . . [illegible]6

Varying consequences of language contacts and their respective importance. How languages die out. Mixed languages and the conditions in which they are built up.

V. THE RELATIONSHIP BETWEEN LANGUAGES AND THE COMPARATIVE METHOD . . 297–314

What we are to understand by term "relationship"; philological descent, and co-existence of languages. The comparative method and its uses in the establishment of linguistic "families".

PART V. WRITING

I. ORIGIN AND DEVELOPMENT OF WRITING . . 315–330

Writing presupposes a rational concept of the graphic sign. Picture, ideographic, and phonetic writing. Syllabism and alphabets.

II. THE WRITTEN LANGUAGE AND ITS SPELLING . 331–343

General character of a written language; its relations with the spoken tongue. Anomalies of spelling; how far a remedy is feasible.

CONCLUSION

THE PROGRESS OF LANGUAGE . . 344–359

The incompatibility of the term "progress", as applied to language, with its usual literary acceptation. Mutation and modification of language elements do not result in stabilization of improvements. Linguistic evolution being but a reflection of social evolution, hypothesis of progress to be accepted with reservations.

BIBLIOGRAPHY 361

APPENDIX 369

INDEX 375

LANGUAGE

A LINGUISTIC INTRODUCTION TO HISTORY

Στρεπτὴ δὲ γλῶσσ᾽ ἐστὶ βροτῶν· πολέες δ᾽ ἔνι μῦθοι
παντοῖοι· ἐπέων δὲ πολὺς νομὸς ἔνθα καί ἔνθα.

Iliad, XX, 248–249.

Je destinais la dédicace de ce livre
à mon maître et ami
Antoine MEILLET;
d'accord avec lui, j'en reporte aujourd'hui l'hommage
à la mémoire des linguistes français
morts pour la France
et particulièrement à celle de mon camarade
Robert GAUTHIOT.

J. V.

PREFACE

THERE is no need of a long preamble to justify the place reserved for Language in a series dedicated to the history of humanity. The preceding volumes have acquainted the reader with the stage upon which this great historical drama is to be played. Man, the principal actor, there makes his appearance equipped with all the material resources necessary. Yet even thus prepared he would assuredly have remained incapable of playing his destined rôle had he not been in possession of language. An instrument and, at the same time, an auxiliary of thought, it is language which has enabled man both to understand himself and to communicate with his fellows, and this fact has made the establishment of society possible It is difficult for us even to imagine a primitive state of affairs in which man was without this efficacious means of action The history of humanity presupposes at the very start the existence of an organized language, there could have been no human evolution without it.

But even if the study of language indisputably occupies a place at the head of any general historical survey, there may be a divergence of opinion upon the manner in which this study is to be conceived. Language is complex; it is affected by different sets of laws, and interests diverse groups of scholars. It is a physiological act in so far as it makes use of several organs of the human body; a psychological act in that it presupposes voluntary mental activity; a social act in that it responds to the need of communication between men, and, finally, it is an historical fact, found under very different forms and at very different times, throughout the world We may therefore think of language either as the study of the physiologist who classifies the ways in which the speech-organs function; or of the psychologist who analyses the mechanism of thought while taking into account the findings of mental pathology; of the sociologist who demonstrates the influence of social organization upon its development; or finally, of the historian who arranges languages according to families and determines their geographical distribution. Any one of such scholars could write a book which might perhaps penetrate into the linguistic field, but would start from a point outside the science and would arrive at conclusions extending beyond it.

The writer of the present work, a linguist by profession, prefers to confine himself exclusively to the linguistic field He starts from linguistic facts as furnished by experience. The arrangement of the book follows the analysis of the linguistic phenomena Philologists distinguish three different elements in language—sounds, grammar, and vocabulary. The first three sections of the book are accordingly devoted to the study of these three elements They are thus a study, at once static and dynamic, whose object it is to discover from the facts the causes of the changes which they conceal and to serve as a preparation for the fourth part. This fourth part is concerned with the study of language as such It deals successively with the definition of language, its different existing types, the methods of formation, evolution, and division of languages, the contact and interaction of one language on another, and, finally, the question of genetic relationships. Our method will be to proceed from the simple to the complex; sounds, for instance, are simpler than the words and the sentences of which any language is composed. As a result of this arrangement, the first three chapters are the most technical and will also appear the driest. To atone for this, however, the last chapters will open up wider and more varied vistas to the reader who has not been disheartened by the earlier sections. A fifth part, in the nature of an appendix, is devoted to written language. The book, as a whole, is enclosed within two general chapters, one introductory, presenting the problem of the origin of language, and the other a conclusion discussing its growth.

Around the central linguistic facts are thus grouped all those developments that form the specific subject matter of the book Although the material is of a varied nature and often embraces related branches of knowledge, the book, I think, possesses a definite unity arising from the viewpoint consistently adhered to by the author. On rare occasions, it has seemed useful to supplement the information gained from linguistics by an excursion into some neighbouring science. The author hopes that these deviations from his principle will not appear unjustified In general he has limited himself to presenting the facts as a linguist, judging this to be the best way of interesting workers in other sciences whom he could have assuredly taught nothing new had he encroached upon their fields.

The adoption of this principle, however, imposes a difficult task. To study language as a linguist quite naturally would lead to a specific treatise on general linguistics. Yet anyone who is at all versed in philology knows very well that there are few more dangerous undertakings For a successful study of this kind, a man would have to be acquainted with all the existing forms of language, and trained in all the languages spoken on the globe. Does such a man exist? It is doubtful If it were a question simply of selecting from among the living the particular individual who approximated most closely to such an ideal, scholars might perhaps have little difficulty in making a choice Yet the fact remains that up to the present moment, no book has appeared in which a programme covering the whole field of linguistics has been entirely realized.

I need hardly say that this will not be realized in the present book either. Irrespective of other reasons, the restricted space at the author's disposal would sufficiently explain why he has not made the attempt. Each of the facts studied had to be considered as a detached fragment belonging to a vast history still to be written. In reviewing the main linguistic questions—and none has been neglected except through error or forgetfulness—he has been forced to restrict himself to the development of characteristic types only So episodal a method may perhaps suffer from the disadvantage that it divides up the material and thus breaks the connecting link running through all its developments, and to remedy this the author has resorted to something in the nature of a subterfuge. Like everything with a development and a life history, language forms a continuum, in the sense that phenomena have no definitely limited demarcations, and that we pass by a series of insensible gradations from one to the other of the high peaks where each fact manifests itself in all its fullness It is sufficient, therefore, if we arrange the developments in such a way that their natural transitions become apparent, transitions, that is to say, arising from the nature of the facts studied Had the author presumed to force the whole material into abstract formulæ, rigidly linked together, serious gaps in knowledge might have been put into a text-book. This he has evaded by substituting [illegible] with clear-cut lines, a flexible framework adapting itself to the facts selected, and following their general outline.

By treating the subject in this way the author flatters himself that his task has been made possible without any consequent diminution of interest. He has not offered the reader a manual of general linguistics, but has endeavoured merely to give an idea of what the science of language is, of the questions of which it treats, and the principal results which it has attained. But even when its scope is thus reduced, the undertaking must seem somewhat foolhardy. What finally induced the author to make the attempt was the valuable support given him by friends who have been good enough to take an interest in the book. He has great pleasure now in thanking them all; in particular M. Meillet, who not only inspired the work, but subsequently took upon himself the labour of reading the manuscript and discussing with him many of the points raised; the reader will undoubtedly recognize the traces of his influence. Another colleague and friend, M. Jules Bloch, likewise read the entire work in manuscript and gave the author the benefit of numerous suggestions. Finally, he wishes to acknowledge all he owes to his honoured colleagues of the *Société de Linguistique*; MM. Delafosse, Deny, Gaudefroy Demombynes, Isidore, Lévy, Lévy-Bruhl, and Pelliot. Thanks to them, a number of chapters have been enriched with original first-hand data. On those points where their kindness has been laid under contribution the book has gained a precision for which they alone must be given credit. It is no fault of theirs if, taken as a whole, the work is not better.

J. VENDRYES.

MELUN,
July, 1914.

Post-scriptum.—Though the present work was completed in 1914, the manuscript was only sent to the printers in 1920. The course of events is a sufficient explanation of this delay, and no excuse need be offered. But the author would remind the reader that he has before him a work already ten years old. The general arrangement has, in fact, not been altered; and he has confined himself to the correction of certain points of detail in which he has had the assistance of MM. Maurice Martin, Ernest Marx, and Henri Grappin, to whom he is glad to express his thanks.

With a view to a new impression the work was completely revised by the author during the summer of 1924. His additions and corrections will be found in a special Appendix at the end of the volume.

INTRODUCTION

THE ORIGIN OF LANGUAGE[1]

THE statement that the problem of the origin of language is not of a linguistic order always provokes surprise It is true nevertheless. It is because they did not perceive this that most writers on the origin of language during the last hundred years, have gone so far astray. Indeed, their principal mistake was that they treated the problem as though it were a philological one, as if the origin of language were one with the origin of languages.

Linguists study both spoken and written languages; they follow up the history of these languages with the aid of the oldest accessible documents Yet however far back they pursue their inquiries, they always find themselves dealing with highly developed languages, possessing a past of which we know nothing The notion that the reconstruction of the original language might be arrived at by a comparison of existing languages is chimerical, and though it may have been played with by the founders of comparative grammar,[2] it has long since been abandoned

Some languages have been proved to be older than others, and certain of our modern tongues are known to us in forms more than two thousand years old. But the oldest known languages, the "parent languages" as they are sometimes called, have nothing of the *primitive* about them. Differ though they may from our modern tongues, they only furnish us with an indication of the changes which language has undergone, they do not tell us how language originated.

---

[1] For a good history of this question, cf Borinski, **CXLVI**, pp 3-20; also Jespersen, **CXXXIV** pp. 328-65. It has given rise to a whole literature. The chief names, which at the same time serve to indicate the chief tendencies or stages in the past, are J.-J. Rousseau, *Essai sur l'origine des langues* (posthumous work); Herder, *Geburt der Sprache mit der ganzen Entwicklung der menschlichen Krafte*, 1770; J. Grimm, *Ueber den Ursprung der Sprache*, 1851, Steinthal, *Ursprung der Sprache im Zusammenhang mit den letzten Fragen alles Wissens*, 1851 (4th ed., 1888), Renan, **CX.**

[2] Notably Franz Bopp, **CXLV**, see Delbruck, **CLIII**, p. 2, and V. Thomsen, **CCXLI.** Cf. also Whitney, **CXLI.**

Nor can we advance much further by a study of the language of uncivilized peoples. Savages are not primitive peoples, although they have often wrongly been called so. Some of their languages are as complex as the most complex of our own, while others possess a simplicity that our most simple languages might well envy. Both types are the result of changes of whose point of departure we are ignorant. If there is a difference between the languages of so-called civilized peoples and those of savages, it lies rather in the ideas expressed than in the expression itself. The languages of uncivilized peoples may supply us with useful information about the relations between language and thought,[1] but not on what was the original form of language.

We might, indeed, be tempted to seek it in the language of children,[2] an equally futile attempt. Children can only teach us how an organized language is acquired; they can give us no idea what language was like initially. By observing the efforts made by children to repeat what they have heard adults say, we get more than one indication of the causes of the changes to which language is subjected. But the child returns to us only what he has received; he works only upon the elements furnished by his surroundings and constructs his words and sentences out of them. His is a work of imitation, not of creation; it lacks all spontaneity. Whatever innovations he may introduce are unconscious. They are the result of a natural laziness that is content with using what is near at hand, and is not due to any deliberate creative activity.

Whether, then, he is dealing with the oldest known languages, with the languages of savages, or with those which children learn to speak, the linguist has before him an organism already formed and prepared by the work of countless generations in the course of many centuries. The problem of the origin of language is outside his jurisdiction. The problem is, in reality, bound up with that of the origin of man and of society, and it belongs to primitive human history. Language has evolved just in so far as the human brain has developed and society has been organized It is impossible to say in what form human speech first took shape, but we can endeavour to determine the conditions which made speech possible. They are at once psychological and social.

---

[1] Lévy-Bruhl, **XCVIII**, p. 76 ff.

[2] For the language of children, cf. particularly Clara and William Stern's *Die Kindersprache*, Leipzig (1907). See also Meumann, *Die Sprache des Kindes*, Zurich (1903). (*Abhandlungen herausgegeben von der Gesellschaft für deutsche Sprache in Zürich*); Ch. Rousey, "Notes sur l'apprentissage de la parole chez un enfant," **VII** (1899 and 1900); M. Grammont, "Observations sur le langage des enfants," **XCIX**, pp. 61-82; O. Bloch, "Notes sur le langage d'un enfant," **VI, XVIII**, p. 37; J. Ronjat, *Le développement du langage observé chez un enfant bilingue*, Paris (1913).

The most general definition of language that can be given is that it is *a system of signs*.[1] To study the origin of language means, therefore, to look for the particular signs naturally at man's disposal and the manner in which he was led to employ them.

By signs, we understand all those symbols capable of serving as a means of communication between men. As signs can be of various kinds there are necessarily many kinds of languages Any sense-organ may serve to create a language. There is olfactory, tactile, visual, and auditory language There is language whenever two individuals come to attribute a certain sense to a given act and perform this act with a view to communicating with each other. The use of a given scent on a dress, a red or yellow handkerchief protruding from a pocket, a more or less prolonged handshake—all these constitute the elements of a language directly any two persons agree to use them to transmit an order or a message.

But among the different languages possible there is one more important than all the others, owing to the variety of the means of expression which it provides. This is auditory language, called also spoken or articulate language, and it is the only one with which we shall deal in this book. It is sometimes accompanied, and more frequently still supplemented, by visual language. Among all peoples, gesture, to a certain extent, emphasizes the word, and facial expression, no less than the voice, translates the emotions and thoughts Mimicry, too, is a visual language, and writing must be regarded as belonging to this category, and, in general, every system based on signals

Visual language is probably quite as old as auditory language. We have no reason to believe, and certainly no means of proving, that one ante-dated the other.

The majority of visual languages in use to-day are directly derived from the auditory one. This is true of writing, as we shall see in Part V; and it is true [illegible] likewise. The marine signal code, for example, is intended to furnish visual equivalents for the words and sentences of existing languages. It gives us no information as to the origin of signs as representations of ideas. A particular sign has been chosen in preference to another by convention, but a convention with certain inherent limitations. Such languages are by definition artificial. One natural use of visual language is well known, namely the language of gesture, employed by certain savage peoples side by side with auditory language.[1] We are not here dealing with the gestures that accompany words, such as we can observe among civilized peoples, but with a system of gestures which by themselves express what words are meant to express, namely ideas. It is a rudimentary language, but one which has its advantages, for it can be employed for distances where sounds could not carry, though the eye might still be able to distinguish movements. It permits, furthermore, of communication without fear of attracting the attention of persons present, by the use of the voice. Schoolboys use this means of silent communication in the class room. Gesture language may thus have been utilitarian in origin. Yet the fact that among savage peoples it is specially employed by women, suggests another explanation. A difference of language between the sexes is usually of religious origin.[2] As the words men employ are forbidden to women, the latter have to use a special vocabulary, created by themselves, which can freely substitute gesture for voice when necessary. The survival of gesture language can thus be explained as due to the constraint imposed by interdictions (cf. pp. 184, 240). But whatever its origin may have been, it is only a substitute for auditory language, and to this it must adapt itself.

---

[1] B. Leroy, **LXXXVII.**

The gesture language of deaf-mutes is also based on auditory language. It is through gestures that we make known to people thus afflicted the methods and rules of everyday language, and thus enable them to communicate with one another and to read what men who hear and speak have written. By substituting one sense for another we enable them to communicate by signs.

---

[1] Wundt, **CCXXIII**, i, I, p. 128.

[2] Van Gennep, **LXXIV**, p. 268 ff.

The case of deaf-mutes invites us to reflect upon the origin of the linguistic employment of signs We may ask ourselves whether language is an acquired fact resulting from education or, on the other hand, instinctive and spontaneous. Normal children can teach us nothing on this point, From birth they are aware of the exterior world Before emitting sounds they are brought into relation with their environment by their hearing, and from the moment they speak they find themselves part of the warp and woof of social interchange. In deaf-mutes, on the other hand, an understanding of the sign must be awakened. Incapable of learning spoken language, they are freed by their infirmity from the influences exercised by persons who can speak upon normal children from their earliest years But deaf-mutes can see and their eyes will tell them the sort of use to which language is put In order, therefore, to answer the question propounded, it would be necessary to penetrate into the mind of a human being who was shut off from the external world either by congenital infirmity, or completely deprived from birth of communication with his fellow-men The second hypothesis need only be stated for its absurdity to be realized. For how could human beings be segregated and prevented from making use of their senses, so that their brains might function as in a dark chamber that has no communication with the outside ?

We all know the strange experiment tried by Psammetichus, King of Egypt, and described by Herodotus (ii, 2). Wishing to find out whether the Phrygians were of a race older than the Egyptians, he had two infants brought up from birth in such a way that they were prevented from hearing any language whatsoever. When the test took place, several months later, it was noticed that when the children asked for food, they used the term *βεκός*, which means "bread" in Phrygian. From this Psammetichus inferred that Phrygian was the older of the two languages. We might further conclude that the faculty of language was innate in man. The bona fides of this experiment of Psammetichus, if it took place at all, was clearly not above suspicion.

There are, however, experiments which appear at first sight more conclusive. These deal with people born both deaf and blind, and thus cut off from communication with the outside world There is the case, for example, of the French woman, Marie Huertin[1] and of the American Helen Keller.[2] The latter is particularly interesting. She succeeded in acquiring an education sufficiently extensive to enable her to read and write literary and philosophical works in several languages. In so far as her writings have not been romantically coloured by the influence of her surroundings, they contain some interesting indications.

Helen Keller's language was the result of education. A book published about her[3] describes with emotion the scene when, after several unfruitful attempts, she was finally made to understand the value of a sign. On that day the veil which had hidden the world from her was rent and the complex network which unites things and words was revealed. The interest of this scene, however, is primarily individual. Helen Keller was quite outside the ordinary conditions of life, her case remains exceptional. The first human beings who spoke would not have been able to understand the meaning of a sign as did this unfortunate girl. The development of language in the case of an abnormal individual hitherto cut off by infirmity from any means of communication with the world cannot give us any idea of its evolution in a society composed of normal beings. It is in the bosom of society that language is formed, and it has existed from the first day when men experienced the need of communicating with one another. It is the result of contact of a number of human beings possessing sense organs and using in their relations with one another the means that nature put at their disposal, gestures if they lack words, facial expression if gesture does not suffice. The best experiment to make would be to follow Psammetichus, and to bring together two or more children each entirely cut off from all educational influences and ignorant of the nature of language. Whatever the race to which they belonged, and quite apart from the question of hereditary dispositions, it can hardly be doubted that these children would spontaneously create a language for themselves, and that it would not be Phrygian. Need would inevitably bring the organ into action. So must it have been in the beginning

---

[1] Louis Arnould, *Âmes en prison*, Paris, 10th edition (1919).

[2] W. Stern, Helen Keller, *Die Entwicklung und Erziehung einer Taubstummblinden*, Berlin (1905).

[3] Gérard Harry, *Le miracle des hommes*, Paris.

Language is thus the social fact *par excellence*, the result of social contact. It has become one of the strongest bonds uniting societies, and it owes its development to the existence of the social group.

Language became a social fact only when the human brain was sufficiently developed to use it Two individuals could have developed a language only because they were already prepared to do so. This is as true of language as of all human inventions. The question has often been raised, whether human language was single or multiple in origin. But this question is really of no interest. Whenever mental progress reaches a certain point of perfection new discoveries come of themselves and from several quarters at the same time. They are in the air, say the scholars, and one can feel them coming as one expects in autumn the fall of ripe fruit in the orchard.

Psychologically the original linguistic act consists in giving to a sign a symbolic value This psychological process distinguishes the language of man from that of animals.[1] It is wrong to contrast one with the other, and to say that the second is natural while the first is artificial and conventional. Human language is no less natural than that of animals, but it is a degree higher, in that man, having given to signs an objective value, is able to vary it indefinitely by convention. The difference between animal and human language lies, therefore, in the appreciation of the nature of the sign.[2] Dogs, apes, and birds can make themselves understood by their kind, they have their cries, gestures and songs corresponding to certain physical states of joy, fear, desire, and hunger Certain of these cries approximate so well to particular needs, that they might almost be translated by a phrase of human language. And yet animals do not express themselves in sentences.[1] They are [illegible] of their cries, complex though these [illegible] we can [illegible] the words which are the constitutive elements in the sentence. For animals the sentence is indistinguishable from the word. The word itself, further, being in essence emotional, has no independent objective value. And since it is not determined by convention, animal language does not admit either of development or of progress. There is, indeed, no indication that animal cries ever differed from those of to-day. The bird which utters its call in order to attract the hand that holds out to it a piece of [illegible] is not aware of its cry as a sign.[2] Animal language implies an adherence of the sign to the thing signified, and in order that this adherence may disappear and the sign assume a value independent of its object, a psychological operation is necessary, and it is this which marks the beginning of human language.

---

[1] Steinthal, **CCVII**, pp. 324-58; R M. Meyer, **XXX**, vol xii, p. 307.

[2] This idea has been vigorously expressed by Bossuet. "Animals can be influenced by the voice in so far as this represents a breath, emitted and vibrating but not in so far as it has an agreed significance, which we properly call speaking and hearing" (*Logique*, I, vol. xxiv). Cf. *Traité de la connaissance de Dieu et de soi-même*, chap v, § 5. "It is one thing to be 'aware of' a sound or a word, because, physically speaking, it disturbs the air and subsequently reaches the ears and the brain, but it is something quite different to regard it as a sign agreed upon by men, and recall the thing it signifies. It is the latter process which we call understanding a language; and of this there is no trace in animals."

The enigma of the psychological evolution of man ought, in part, to be cleared up by anthropological data. This science teaches us the extent to which the skulls of the cave men resembled those of anthropoid apes. In the *Neanderthal* and Spy skull, for instance, the area reserved for the convolutions in which speech is localized, is markedly restricted. We may, therefore, suppose that the development of language is the result of a natural growth of the human brain. Such an hypothesis does not force us, however, to accept unreservedly Broca's well known theory of cerebral localizations.[3] It is true that this theory has lost much of the favour in which it was once held. It is the fashion nowadays to discredit it. Recent researches indeed claim to have completely demolished it. The chief objection that can be brought against it is that it over-simplifies a very complex question. In the localization of speech *en bloc* in the third left frontal convolution Broca made only a rough approximation; and, in particular, in teaching that there are in the brain definite large regions corresponding to the great divisions of the mind, he misinterpreted the connexion between language and thought.

---

[1] L. Boutan, "Pseudo-langage," Bordeaux, 1913, *Actes de la Société linnéenne de Bordeaux*, cf. Meillet, **IV**, vol. [illegible]

[2] On the Language of birds, cf. M. Bréal's minute observations, *Revue des revues*, vol. xxxiii (1900), pp. 629-32, reproduced in **IV**, vol. xi, pp. [illegible]

[3] On this question, cf. the excellent summary of Dagnan-Bouveret, **X**, vol. xvi (1908), pp. 466 et seq. Cf. also Dr. P. Marie's works and Dr. F. Moutier's book *L'aphasie de Broca*, Paris (1908).

It is wrong to think of the brain as if it were built on the plan of a grammar, cut into sections for the different parts of speech All the phenomena of speech are distributed in a freer and wider manner in the brain than Broca thought At the root of those cases of motor aphasia resulting from accidents, upon which Broca's theory rests, there is doubtless usually a localized lesion But sensory aphasia, as Wernicke has defined it, often presupposes a general mental deficiency; moreover, substitutive phenomena often occur, by which neighbouring centres can take on the work of those injured by the lesion Finally, the cortical layers are so arranged that a lesion can provoke various disturbances extending even to the third left frontal convolution, according to the part of the convolution affected[1] In short, although we may agree to the principle of speech-localization, the details of this localization are still to be worked out

We must consequently be cautious in our interpretation of the data furnished by prehistoric anthropology If we were to regard them too narrowly, and to measure the skull of a cave-man as we do that of a contemporary, we might be driven to conclude that he was aphasic. This would certainly be to look for the beginnings of the development of language in a too distant past But there can be no doubt that the cave-man possessed a brain less adapted than ours to linguistic activity And we may also suppose that his intellectual activity likewise left much to be desired.

In this distant ancestor of ours, whose brain was not yet developed for thought, language may have been purely emotive at first It might have originated, for instance, as a simple chant, keeping time with the step or with hand-work,[2] or as a cry like that of an animal expressing pain or joy, or showing fear or hunger. Subsequently the cry, taking on a symbolic value, would have been regarded as a signal capable of being repeated by others; and man, having this convenient procedure at his disposal, would have utilized it for communicating with his fellows, either to anticipate or to provoke some act on their part Before becoming a rational instrument, language had to be an instrument of action, and one of the most efficacious at man's disposal. After the mind had once become alive to the meaning of the sign, it now remained to develop this wonderful invention for the perfection of the vocal apparatus to go hand in hand with that of the brain. In the earliest human groups language became fixed through the operation of laws governing all society. Especially in collective ceremonies did the same vocal or choral manifestations impose themselves upon all members of the group.[1] The constituent elements of the cry or the song thus took on a symbolic value which each individual kept for his own personal use. And little by little, thanks to the increasing multiplicity of social interchanges, there would finally emerge, with all its incomparable richness, that complex apparatus with which thoughts and feelings and every sort of thought and feeling could be expressed.

---

[1] Wundt, **CCXXIII**, vol. i, p. 494.

[2] K Bucher, *Arbeit und Rhythmus*, 3rd ed., Leipzig (1912).

This hypothesis, although not demonstrable, is at any rate a plausible one. Its object is to render language comprehensible as a natural product of human activity, a result of the adaptation of man's faculties to his social needs.[2] But we must start from consciousness of the sign. This fact once admitted, all language unfolds from it through a series of successive differentiations.

After what has been said on pp. 5, 7, it would be rash to attempt to attain any greater precision or to try to discover how this differentiation has come about, and by what stages it passed from the signal cry to such varied forms of expression as those which constitute the richness of a language like French. Since in every language there must be certain fundamental forms to be distinguished from later acquisitions overlaying them, the linguist is expected to begin from these superposed accretions and indicate those parts of the language that were constituted first. And sometimes the linguist ventures on an answer. But we must boldly avow that no answer is of value. The ordinary method of passing from the known to the unknown is here invalid. The principles underlying the evolution of the languages known to us do not necessarily apply to those spoken by people whose mentality is differently oriented from ours. The study of language shows that its development does not follow any logical succession along a straight path. It would be an error to imagine that the plan of the *Port-Royal Grammar* could have been imposed upon the human mind at the outset as a frame to be filled in by a methodical progression.

---

[1] Borinski, **CXLVI**, p. 38.

[2] "Speech, being the first social institution, owes its form to natural causes alone" (J.-J. Rousseau, *Essai sur l'origine des langues*).

Between the sign and the thing signified, between the linguistic form and the thing to be represented, there is never a natural connexion, only a connexion arising out of certain conditions It was for a long time believed that the earliest linguistic act consisted in giving names to things, that is to say, in creating a vocabulary. That is the idea to which Lucretius gave expression in the line so often cited,

Utilitas expressit nomina rerum,

wherein he quite rightly attributes the origin of language to the necessity of satisfying some special need. In France, in the eighteenth century, President de Brosses[1] attempted to account for the outward forms of words by the meaning they express The aim of his research was to construct a kind of sound symbolism which primitive man might have used to create words. To-day, such an attempt only raises a smile What is essential is not the labelling of objects with special names, but the adoption of a current value for words, by a sort of tacit agreement between speakers, so as to make them into a means of exchange, just as we have substituted cash or paper money for payments in kind.

Nearer our own time, certain linguists have advanced theories according to which every vocabulary is the outcome of a cry analogous to the barking of a dog, or else of a series of sounds which serve to suggest objects of various kinds[2] It was about the same period that the Vedic scholars attributed all mythology either to lightning or the course of the sun. Philologists and mythologists were then content with simplistic conceptions of phenomena Discussions took place as to whether language began with nouns or verbs; the verb expressing action and the noun designating ideas and the quality of objects. But different as noun and verb may appear to us, there is no essential opposition between these two poles of our grammar. Does the "bark" of the dog signify "I am hungry" or "Give me something to eat", "This is good" or "I have done eating"? Neither—or both. We may interpret it as we please, by a verb or a noun, an imperative or a past tense. Despite all our efforts, between the primitive "bark" and our oldest tongues there exists a gulf which can never be bridged.

---

[1] *Traité de la formation mécanique des langues*, Paris (1765), cf. R. M. Meyer, **XXX**, vol. xii, p 243.

[2] See the details in Jespersen, **CXXXIV**, 2nd ed., p. 330 ff., and Borinski, **CXLVI**, pp. 11 ff., 39.

What has contributed toward stimulating research into the primitive forms of language is the comparison which has been established between the philological and natural sciences like geology, botany, or zoology. This inaccurate comparison has rendered ill service to the subject. If we wish to find analogies to language we ought rather to seek them in social science. Michel Bréal went so far as to compare the Indo-European conjugation to "large political and judicial institutions, parliaments or Kings' councils which, springing from some fundamental need, gradually became diversified, extending their attributes until a later age, finding the machinery too cumbrous, had curtailed a part of it and distributed its functions among several free and independent bodies, which still partook, in a certain measure and with visible signs of their old solidarity, of the initial conception".[1]

This comparison may be applied to language in general, for language is an institution. In language, however, there are certain elements more stationary and less subject to arbitrary human will than political institutions. These elements are sounds, and with them we shall begin our study.

[1] VI, xi, p 274.

PART I

SOUNDS

CHAPTER I

THE SOUND MECHANISMS[1]

BY *sound* we mean the effect produced upon the ear by certain vibrations In speech, the vibrations are produced by the vocal apparatus of the speaker. The science of sounds in language, otherwise called Phonetics, ought then to comprise three sections, devoted respectively to the study of the production, transmission, and reception of sound. The production and reception are phenomena of equal importance in language, since, in order that language may arise, there must be at least two people in communication and the spoken word must be intended to be heard The reception of sound, also called audition, likewise plays an important part in linguistic changes; it is by means of the ear that each speaker acquires and establishes his phonetic system Theoretically we cannot give audition too great a place in the study of language

Nevertheless, phonetics has long been practically limited to the study of the production of sound.

Linguists hardly concern themselves with audition, but hand over that study to the physiologists. This limitation is justifiable. With regard to language, the auditory images received by the listener are of value only in so far as he is capable of transforming them into motor images, so that he may in his turn become the speaker. In other words, the listener must potentially possess what the speaker has transmitted into action This it is that conditions language. Hence phonetics may ignore the auditory side of language, since when two persons converse in the same language audition presupposes the existence of an equal capacity for *phonation* on both sides These are simply two aspects of the same function whose limits are identical A careful study of the nerve centres would, undoubtedly, enable us to distinguish them; but such an analysis does not fall within the domain of phonetics.

At the present day the transmission of sound seems to be the principal concern of the phonetician;[2] by preference he devotes himself to the analysis of vibrations, a vast field of research, tending toward pure physics which cannot be explored except by those who are well grounded in mathematics. Phonetics hence acquires a special precision; in particular it possesses the means of distinguishing sounds by the frequency and form of the vibrations which characterize them. In this book we shall adhere to the custom of the older school, limiting ourselves to the study of sound-production, that is to say to phonation, and to the description of the results of phonation, that is, the *phonemes*.

---

[1] Cf. in general to the works of Rousselot, Roudet, Poirot, Passy, Sweet, Jespersen, E. Wheeler, Scripture, Victor, Gutzmann, Sievers, Trautmann.

[2] Cf. particularly Rousselot, **CXV**, and Poirot, **CXCI**.

Man's phonetic apparatus consists essentially of a bellows, i.e. the lungs, and a sound-tube, the trachea, closed at its upper extremity by a two-fold swelling known as the vocal chords, or, in a single word, the glottis. It is, therefore, a wind instrument, and an instrument with a double reed. It is in this arrangement of the glottis that is manifested the superiority of the human apparatus to all other vocal instruments. The vocal chords have a flexibility which the necessarily rigid tubes of an oboe cannot attain. Thanks to a delicate mechanism which brings into play several pairs of muscles, they can assume different positions. They can either be kept closed or be more or less completely opened, made to vibrate throughout or in part, and modified as to their tension. All this gives language the variety of resources by which it profits.

At the same time, the sound apparatus would be most imperfect if it consisted solely of the glottis. It would only have been able to express vowels, and these would have been less differentiated than those we normally pronounce.

In fact, the current of air expelled by the lungs while causing the vocal chords to vibrate gives rise to the "voice". As the vibrations are capable of lasting as long as the supply of air allows,[1] and can vary, moreover, in amplitude and force, the "voice" has three characteristic qualities, namely, duration, musical pitch, and intensity. It also varies according to the individual vowel owing to the fact that the muscular play allows the glottis to rise or fall, and so to elongate or contract the sound-tube.

But the indispensable complement of the phonetic apparatus is supplied by the cavities into which the glottis opens—the pharynx, the nasal fossæ, and above all, the buccal cavity The walls of these cavities, for the most part elastic, act as a resonator for the "voice" and give to each vowel its proper timbre In this resonator are flexible and ductile organs capable of modifying its size and capacity In the first place there is the *velum palati* or soft palate, which can close the access to the nasal fossæ, and prevent all resonance on that side. But it is the tongue which, together with the glottis, plays the most essential rôle in sound production. In enunciating the vowel *a*, the tongue is extended and lies almost flat in the mouth But in the case of other vowels the tongue is displaced in order to act in each case as the proper afferent resonator Sometimes the tongue moves forward and upward, thus decreasing the size of the anterior part of the mouth; sometimes it moves backward and decreases the size of the posterior part. In the first case it forms the resonator for the vowels known as anterior or palatal, which begin with *a* and continue with open *e*, closed *e*, open *i*, closed *i*. In the second place it forms the vowels known as posterior or velar, that is to say, always begins with *a*, open *o*, closed *o*, open *u*, closed *u*.[1] In each of these anterior and posterior series the *i* and *u* are the most closed, and in forming them the tongue assumes the highest possible position and consequently that closest to the palate. *a* is the most open of all the vowels. For each vowel, moreover, there are several varieties of timbre corresponding to the different resonances and hence to the different positions assumed by the tongue. Parisian French, for example, admits of three varieties of *a*, easily distinguishable by the ear *a* is closed in *pâte*, open in *patte*, and intermediate in *carotte*.

---

[1] Roudet, "De la dépense d'air dans la parole et de ses conséquences phonétiques" (**VII**, vol. ii (1900), pp. 201–30).

But the tongue is not the only organ to play a rôle in the formation of the resonance proper to each vowel. We must also take into account the different positions of the lips in each case. There is a well-known scene in the *Bourgeois Gentilhomme* in which we obtain fairly clear information about the movements of the lips in the production of vowels, and from a passage in Dionysius of Halicarnassus we learn that the Greeks, although poor phoneticians, already knew as much about this question as the contemporaries of Homer (*Περι συνθεσεως ονοματων* chap. xvi). As a matter of fact it is easy to see that in pronouncing *u* the lips move forward and become rounded as though in a pout, and that in pronouncing *i* the corners of the mouth retract and pull the lips backward. These are the two extreme positions between which lie those corresponding to the pronunciation of *o* (open and closed), and *e* (open and closed). Language has utilized this simultaneous lip and tongue position in order to create a hybrid series, that of the French *eu*. By combining the tongue position in the anterior vowels (*è*, *é*, *i*) and the lip position in the posterior vowels (*ò*, *ó*, *u*), we obtain almost exactly the three French sounds, open *eu* (*beurre*), closed *eu* (*queue*), and *u* (*flûte*), the last generally written *u* phonetically.

---

[1] All vowels have their continental value.

Between one language and another the differences in the varieties of vowels are very great; English, for example, has scarcely a single vowel in common with French.

Phonemes are usually divided into consonants and vowels. Practically speaking, this distinction is justified by the definition of the syllable (see p. 51). At the same time, the same phoneme is often capable of acting in the syllable either as a consonant or a vowel. Though there may be a difference of function between these two, there is none in the actual nature of the sounds and no definite boundary separates them. Consonants and vowels form part of a "natural series whose extremes alone are clearly separated."[1]

At one extremity of the series stand the vowels *a*, *e*, and *o*, as just defined. At the other are the consonantal occlusive surds *p*, *t*, *k*. These consonants are simply noises and are formed when the air is momentarily stopped by some obstacle. This obstacle is generally in the mouth, and is formed sometimes by the lips, sometimes by the tip or the back of the tongue. In the first case the stop is a labial, in the second a dental, and in the third a guttural. But there are other stops whose point of articulation is in the back of the mouth; these are the laryngeal, pharyngeal, and glottal.

As the lips always close in the same place, there is only one occlusive labial surd. In fact as regards the place of closure, and apart from differences in stress, *p* is the same in all languages

---

[1] Rousselot, cited by Roudet, **CXIII**, p. 78.

On the other hand, the tip of the tongue remains mobile, and the back of the tongue is able to move along the entire length of the hard and soft palate, hence there is scope for numerous contacts, and we can understand how there may be several kinds of dentals and gutturals according to the point of closure. Most often the tip of the tongue is pressed against the upper teeth, and that is why the consonant thus produced is called a dental as, for example, the French *t*. But the tip of the tongue may likewise press against the alveolæ, as in the case of the English dental in *take* or *tire*, and it is then an alveolar consonant. Finally, by curling backward, the tip of the tongue can touch the palate and give rise to what some linguists call the cacuminals or cerebrals. These, like the alveolars, are merely special kinds of dentals.

The sounds known as gutturals admit of still greater variety. Any point of the back of the tongue touching any point on the palate will produce a guttural. If the occlusion takes place on the hard palate, we get a palatal (the *k* in the French *qui*) , if on the soft palate, toward the velum, we get a velar *k* as in German *Kuh*. Velars and palatals, in turn, admit of several varieties ; and we distinguish, for example, the pre-palatals and the post-palatals according to the distance of the point of contact from the hard palate.

• Having thus defined the point of contact, let us examine the mechanism of the occlusion. Air is expelled from the lungs ; it passes through the glottis, which is open and tense, and enters the buccal cavity, where it is abruptly stopped at the lips, the teeth, or the palate in the manner just described. The contact then ceases abruptly, and the air can continue to escape. Thus, in every occlusive consonant, there are three distinct stages ; a closure or implosion, a retention of longer or shorter duration, and a release or explosion.[1] In pronouncing a simple consonant, *t* for example, the explosion follows immediately upon the implosion, and the retention is reduced to a scarcely appreciable fraction of time. On the other hand, the three periods are clearly marked in what we call the double consonants, which are merely long consonants pronounced with greater force than the short ones. Apart from the question of stress, a group *atta* is distinguished from a group *ata* by the fact that between the implosion and the explosion of breath there is a retention appreciable to the ear. It is incorrect to say that *atta* is composed of two consonants and *ata* of only one. Exactly the same elements lie between the two vowels in both groups: an implosive element followed by an explosive element. But while in *ata* the implosive is followed immediately by the explosive, in *atta* the explosive is prevented from following immediately by the retention, which prolongs the length of the closure.

---

[1] Rosapelly, "Valeur relative de l'implosion et de l'explosion dans les consonnes occlusives," VI, vol x, pp 347–63.

The difference between the implosive and explosive consonants is very marked when there is a change in the point of contact. Let us imagine that the tip of the tongue is pressed against the teeth at the moment when the air is passing through but that once the closure is effected, the back of the tongue is pressed rather abruptly against the palate, and that the release of the breath takes place in this position. We then have an implosive *t* followed by an explosive *k*, that is to say, a cluster *tk* as for example in *atka*. Conversely, if the contact originally took place at the back of the tongue and the tip of the tongue was pressed against the teeth during the occlusion, we should obtain an implosive *k* followed by an explosive *t* as in the cluster *akta*.

The above will enable us to appreciate the difference between a vowel such as *a*, and a consonant such as *t*. Physiologically speaking, there is nothing in common between these two phonemes except that both are formed by a current of air expelled from the lungs. But between these two extremes in the sound series there is room for many intermediate sounds.

Let us imagine that the closure is not absolute in the first place, and offers some sort of passage, however narrow, to the air. Instead of an occlusive or momentary stop we shall obtain a *spirant* or durative, called also a fricative, because it is characterized by a frictional sound. Instead of a closed aperture opening abruptly in order to allow the accumulated air to pass through we have an opening which remains exceedingly narrow and allows the air to hiss through it. Naturally the spirants may have all the points of articulation possessed by the occlusives. At every point of contact where the latter are formed, we can imagine a corresponding spirant, as soon as the lips, or the tip or back of the tongue permit the escape of air. Spirants may be dentolabial spirants (French *f*), dental (French s), alveolar (English *th* in *thank* or *thick*), palatal (German *ch* in *ich*), medio-palatal (French *ch* in *cheval*), or velar (German *ch* in *Buch*) together with all the varieties admitted by the differences of position. At the back of the buccal cavity various spirants and fricatives can also be produced—laryngeal, pharyngeal, and glottal like the Arabic *haïn*

There also exists a series of phonemes intermediate between the occlusives and spirants; these are known as semi-occlusives, or better still, *affricatives*. They are characterized by a closure which is not entirely hermetical. Like the occlusives they have an implosion, but this implosion is followed by a slight opening motion so that the occlusive ends in a spirant. The fricative is an abortive occlusive. Certain languages make frequent use of them, and they can be transcribed as *pf*, *ts*, *kch*. The southern German dialects have long possessed the last two, and the *kch* can still be clearly heard in the German spoken in Bavaria and Switzerland.

The fricatives and even the spirants are still very far from the vowels. However, this distance is not so great as that between the vowels and the occlusives, since the spirants, like vowels, possess length. We can prolong an *f*, *s*, or *ch* for just so long as the lungs allow But there is a way of bringing occlusives, as well as spirants and fricatives, nearer to the vowels; this consists in giving them *voice*.

We have so far assumed that during the utterance of a consonant the bands of the glottis remained motionless Hence we have only obtained *surd* or non-sonant consonants, that is to say consonants without "voice" (*voiceless*, *stimmlos* as the English and Germans respectively term them). But if we allow the vocal chords to vibrate as we do in order to "voice" vowels, we get the *sonant* consonants (*voiced*, *stimmhaft*). The difference between sonants and surds is that, when the former are pronounced, other things being equal, the vocal chords are in process of vibration This difference can easily be felt when pronouncing in succession the occlusives *p* and *b*, *t* and *d*, *k* and *g*, or better still, the spirants *f* and *v*, *s* and *z*, French *ch* and *j*. If the ears are stopped while they are pronounced, the resonances that the glottal vibrations set up in the cavities of the head in connexion with the sonants will be immediately heard. Naturally, all the consonants that we have mentioned up to the present, occlusives, fricatives, and spirants, admit being voiced, so that if we were calculating the number of consonants possible we should have to double the preceding list, adding the sonants to the surds.

We now come to a series of phonemes which lie midway between consonants and vowels, and which for that reason are generally termed semi-vowels. Conversely, they might just as well be termed semi-consonants, for they are more in the nature of vowels affected by consonantal factors than of voiced consonants. In the list of vowels on page 21, *u*, *i*, and *ü* were given as closest vowels, characterized by the fact that in order to form their specific resonances the tongue is raised (backward or forward as the case may be) in such fashion as to decrease the space separating it from the palate. As a result, the pronunciation of *u*, *i* or *ü* entails a frictional noise which is brought about by the passing of the air between the tongue and the palate.

This rubbing noise is a consonantal element. It is certainly less striking in the pronunciation of these three vowels than in that of a sonant spirant, yet it becomes noticeable when we compare the vowels *u*, *i*, or *ü* with *a*. An excellent way of hearing it is to whisper the different vowels successively. In whispered language which does not admit of sonority and accordingly excludes the "voice", everything is reduced to simple noises.[1] In such a case *a* is also the least audible of all vowels, while *u*, *i*, and *ü* are easily heard owing to the consonantal elements they contain.

Language frequently utilizes this consonantal element by making consonants of *u*, *i*, and *ü*. The same phonemes remain unchanged in each case, but they are being used in two different ways. The consonants corresponding to *i* and *u* are generally written *y* and *w*. In French they occur in *yeux*, *meilleur*, *oui*, and *ouate*. Consonantal *ü*, being rare, has no special sign; in French it occurs in *cuire*, *lui*, *tuer*, *puiser*.

The category of semi-vowels also includes the liquids *l* and *r*, the latter being sometimes described by the more precise term *rolled*. These are consonants which have a definite point of articulation in the mouth, permit a definite position of the tongue, and may or may not be accompanied by glottal vibrations producing sonority. Most frequently they are sonants;

---

[1] For whispering, cf. Paul Olivier, VII, 1899, p. 20 ff.

but there are several languages in which *l* and *r* may be surds. The liquid *l* is a lateral. It is so called from the fact that when the tip of the tongue presses against the palate, the lateral edges of the tongue are lowered in such a manner as to allow the air to pass along its sides. Thus we see that it has certain points in common with the dentals, and in fact the movement executed by the tip of the tongue is very nearly the same in French for *l* and for *d*. There are two other kinds of *l*; one is the liquid *l* formed by the elevation of the anterior part of the tongue toward the hard palate; the other is the velar *l* which is formed when the central and posterior part of the tongue is hollowed like a spoon by the side of the soft palate. Velar *l* existed in Latin, and the Slavonic languages make an extensive use of it.

Liquid *r* is due to a vibration of the elastic parts enclosed in the buccal cavity, and primarily to a vibration of the tongue. There is a dental *r* resulting from the vibration of the tip of the tongue, and a guttural *r* which requires a vibration at the back of the tongue These *r*'s naturally admit of the same varieties as the dental and guttural occlusives. Lastly there is a uvular *r* produced by the vibration of the uvula. This is the *r* called a burr, and it is one of the most difficult sounds to reproduce when one does not possess it naturally. The dental *r* is the only one used in modern English, and as all the English dentals, its vibration-point is at the top of the alveolæ.

From the preceding description we may infer that the two liquids have all the qualities of consonants; and that, in fact, in the words *rateau*, *loquet*, *crapaud*, *claquer*, *tarin*, *milan*, *halte*, *article*, the liquids play the same part as the occlusives in the words *bateau*, *coquet*, *taquin*, *mitan*, *tact*, *aptitude*. But the position of the tongue in the pronunciation of *l* or *r* forms a resonance like that which occurs in vowels. Besides, liquids can be prolonged, and when sonant, as they are, can be employed as vowels to form a syllable. In the German words *Acker* or *Loffel*, the last syllables consist of scarcely anything but an *r* and an *l* which play the part of vowels Certain languages, like Czech, which normally use *r* as a vowel, transcribe it simply by the sign for consonantal *r*; thus *krk* "neck", *prst* "finger", *vrch* "summit".

Being indifferently vowels or consonants, the sounds we have just discussed can be used in yet another manner, as the second element of a diphthong. By a diphthong we mean the combination of two vowels to form a single syllable. The two vowels do not possess the same value, however, for the diphthong is composed of a strong element and a weak one which is generally the second. It is the closed vowels *i* and *u* which best lend themselves to the rôle of the weak or second element. Thus in *ey, oy, ay, ew, ow, aw*, the sound which follows the vowel is properly speaking neither a vowel nor a consonant; it is a diphthongal element. Several Indo-European languages testify to the fact that the second diphthongal element plays a rôle distinct from that of vowel or consonant. At the same time the same languages allow the liquids *l* and *r* to serve as the second member of the diphthong. Lithuanian has conserved to the present day a special treatment of *er* and *el* exactly parallel to that of *ey* and *ew*.[1]

Finally, there is an important class of phonemes which we have not yet mentioned—*nasals*. In all the preceding descriptions we have assumed that the uvula remained close to the top of the roof of the palate, and consequently excluded the air from the nasal fossæ. But the uvula can be lowered towards the base of the tongue, and then the air expelled from the lungs enters the nasal fossæ and escapes through the nose as well as through the lips. In fact, a complete closure rarely takes place. The production of the vowels already considered actually entails the passage of a very small quantity of air into the nasal fossæ. But language makes use of a complete aperture to produce what we call nasals. With some exceptions, due to the character of the organs, all the phonemes previously mentioned, consonants as well as vowels, have a nasal variety. When the uvula is lowered in pronouncing a sound, without any change in the articulation or the position of the tongue, we have a nasal phoneme, be it consonant or vowel. Every Frenchman is well acquainted with nasal vowels through his mother-tongue, which possesses an imposing number. The syllables we write as *an, on, in, un*, represent *un* sounds, in which nasal resonances are added to the natural timbre of each vowel. The vowel is nasalized inasmuch as the uvula is lowered during its articulation, and a quantity of air coming from the glottis passes out by way of the nasal fossæ. It is well to observe that in graphic representations the nasal vowels *an, in*, and *un* do not exactly correspond to the vowels *a, i, ü*, but rather to *ó, é*, and *eu*.

---

[1] Meillet, XCIV, p. 89.

The same mechanism produces the nasal consonants. All consonants may be nasal and certain languages are known to possess a nasal form of *v*, *l*, and *r*. But in general we reserve the term nasal for sonant occlusives with nasal resonances. When the uvula remains lowered during the occlusion of *b*, *d*, *g*, we get the nasals *m*, *n*, Spanish *ñ* (written *gn* in French). These phonemes can be prolonged, but the air naturally escapes only through the nose, since the buccal occlusion prevents any passage of air There are as many nasals as there are sonant occlusives. Those which correspond to the occlusive surds, and which are theoretically possible, are in fact somewhat rarely used

We have just seen that nasals possessing length and voice, entail a resonance from the nasal fossæ. That is to say, they are capable of playing the part of vowels as well as the liquids Many languages in fact possess nasal vowels, and we know that they were present in Indo-European. To-day that can be very clearly heard in the second syllable of the German words *Atem* and *bieten*. Furthermore, Indo-European used the nasals *n* and *m* as second members of the diphthong, and treated *en*, *em*, *on*, *om*, for example, like *ei*, *eu*, *oi*, *ou* Ancient Greek preserved traces of this use in its accentuation, and Lithuanian still furnishes us with examples of the same thing [1]

Nasals perceptibly augment the list of sounds emitted by the human sound mechanism. But even with these we have not yet exhausted its possibilities. The reason why the list of possible sounds is almost limitless is that the elements composing them are for the most part interchangeable, and contain a number of variables.

A vowel is pronounced on a definite note with a definite stress for a definite duration , and pitch, stress, and quantity multiply the varieties of every vowel. And as there can be different quantities in the same language, and since pitch and stress permit of modulations and intonations, these different varieties contain within themselves the causes for multiple variation.[2]

---

[1] Meillet, **XCIV**, p 89.

[2] On the relations of quantity, pitch, and stress in the Slavonic and Baltic languages, cf. especially the fine work of F. de Saussure, **VI**, vol viii, p. 425, and **XXX**, *Anz.*, vol. vi, p. 157, and Gauthiot, **VI**, vol. xi, p. 336 , cf. also Fortunatov, **XXVII**, vol. xxii, p. 153

The part played by quantity in the classic languages may be realized in connexion with their versification. The same is true of Sanskrit. With regard to musical pitch we have remarkable examples, in certain languages of the Far East, in which intonation alone suffices to distinguish the meaning and value of words that would otherwise be homophones. In Chinese, one monosyllable may be pronounced in six different tones, or differently intoned to designate six different objects. There is still greater variety in Annamese,[1] for the syllable [illegible] fifteen different pronunciations have been counted, corresponding to the most varied meanings.[2]

There are still other variations possible, even in the manner of forming the resonance proper to each vowel. There is the hard vowel *hard attack*, the *fester Einsatz* of the Germans, and the *soft oltack* or *leiser Einsatz*. The difference lies in the way the glottis is opened when an initial vowel is pronounced. In the hard attack the glottis opens abruptly, and separates the vowel clearly from all that precedes it; this method is customary with North Germans. It is so typical that it serves to distinguish a German from either a Frenchman or an Englishman, both of whom use the soft attack. The English phonetician Ellis uses an excellent analogy to show the difference. The early dawn breaks so gradually and insensibly that it is impossible to say when night ends and day begins. This is the soft vowel attack. On the other hand, when the closed shutters of a window are suddenly opened at midday a blaze of light completely floods the room in a single moment. This is the hard attack. This abrupt procedure is not even limited to the opening of the glottis. Certain languages, Danish for example, also use it to mark closure. It is directly after the vowels, when the emission of air is complete, that this catch or "stop" occurs (*Stoss* in German, *Stød* in Danish). The two Danish words *anden* "duck", and *anden* "the other", differ only in the presence or absence of the *Stød*. Certain English dialects, and especially that spoken in Scotland, furnish equally good examples of the "glottal stop".[3]

The pronunciation of consonants also admits of very important variations quite apart from the differences in articulation

---

[1] Cadière, **LVIII**, p. 79 ff.
[2] Grammont, **VI**, vol. I, xxi, p. 75.
[3] Jespersen, **CLXXIII**, p. 79.

२९९

described above. Two at least are deserving of mention here those due to muscular effort, and those dependent upon the extent of the glottal opening.

Not all languages require an equal expenditure of muscular force in the production of articulatory movements. In certain of them the effort is reduced to a negligible degree, speech flowing along in a continuous and easy fashion, with a sustained evenness of tone. In others, on the contrary, there is a muscular vehemence which produces upon the ear an impression of violence, with abrupt stops, jerks, and shocks.

Even in the same language, certain phonemes demand a greater muscular effort than others. This fact had already struck the ancient Greeks who distinguished their consonants as strong and weak. In general, the difference in stress is related to the contrast between sonants and surds. This was the case in ancient Greek, and it is the case in French, where the consonants *p*, *t*, *k*, are at the same time surds, and strongly enunciated, and the consonants *b*, *d*, *g*, on the contrary, are at once sonant and weakly enunciated. But there are some languages in which this distinction is unknown, or made in a different fashion. Thus one of the differences separating French from the German occlusives is that in German, especially South German, the sonant occlusives *b*, *d*, *g*, are strong, and appeal to the French ear as sounds intermediate between sonants and surds, sometimes even more closely akin to surds than to sonants. Conversely, the surd conclusives *p*, *t*, *k* in South German are often weak; even as we shall see, when they are not aspirated.

Another cause for variation in the pronunciation of consonants lies in the size of the glottal opening. There are occlusives formed by an open glottis, and others formed by a closed glottis.

Where the glottis is closed, as in French, and also in Slavonic and ancient Greek, the bands of the glottis, or the vocal chords are drawn together during the pronunciation of the occlusives. They are thus ready to vibrate for the vowel following, if the occlusive is a surd, and to voice the occlusive as soon as the implosion has begun if it is a sonant. On the other hand, when the glottis is open, as it generally is in the German languages,[1] the vocal chords require a certain length of time to get into position for vibrating, either to voice the consonant at the moment of implosion or to produce the vowel immediately after the explosion. Most commonly there is a slight delay due to lack of co-ordination between the occlusive and the setting up of the glottal vibrations. The principal difference between these German and French sounds consists in the fact that the glottal vibrations take longer to start in German than in French. That is one more reason why the French, on hearing a German pronounce *ba*, *da*, or *ga*, interpret the sounds as *pa*, *ta*, *ka*. In French the consonant is sonant from the initial stages of the implosion; in German the first part of the consonant is surd, as the sonance does not commence until an appreciable time after the implosion (see p. 51).

---

[1] Meillet, **XCV**, p. 36, and **IV**, vol xvi, p. cliii, Grammont, **LXXVIII**, p 84

Pronunciation with the glottis open entails another consequence. Throughout the entire duration of the occlusion the air expelled from the lungs continues to accumulate in the mouth, since nothing opposes its free passage at the end of the trachea; on the other hand, when the glottis is closed, the glottal bands obstruct the passage of the air, or partially so at least. In consequence, the air escapes from the mouth with much greater violence when the glottis is open, for where it is closed the glottis serves to some extent as a moderating agent to the air-current. The rush of air is generally so violent that we hear at the moment of explosion, a noise characteristic of the sudden emission of air, which we improperly term "aspiration". On the other hand, as we have just said, since the setting up of the glottal vibrations is slightly retarded for the vowel that follows, a shorter or longer period of time elapses during which no vowel or consonant is as yet formed. This period of time is naturally taken up by the aspiration, and we finally get what is called an aspirated consonant. Instead of *p*, *t*, *k*, we pronounce these letters *ph*, *th*, *kh*. Consonants of this description could be easily distinguished in the speech of a South German if he were asked to pronounce *le pavé de Paris*, *une tasse de thé*, *un carreau de casse*.

In the above description we are far from having exhausted all the possibilities of phonemes, for we have thus far accounted only for those produced by an expiration of breath. But there is also a group of inspirated phonemes. Theoretically, we might reclassify all the phonemes of the preceding list, imagining them to be produced by "inspiration". This would double our list. The term inspiration or inspirated is, however, incorrect, for in the introduction of the phonemes in question there is no introduction of air into the respiratory apparatus. These sounds are due simply to a suction movement; they are often called "clicks".[1]

The inspirated phonemes or clicks are somewhat rare. It is said that certain African tongues normally use them, but they do not figure in the phonetic system of Indo-European languages. They are only encountered by accident here and there. It has been established that in modern Breton the development of the *p* at the end of the first person plural (e.g. *karomp* "we love", from *karom*) is due simply to the presence of a click.[2] But this is exceptional in modern European languages

Nevertheless, clicks are used as interjections in all languages. Thus French has an inspirated *t* to express doubt or attract attention; by inspirating an alveolar *t* we show admiration or surprise; inspirated *f* sometimes expresses the satisfaction of the epicure and at other times a feeling of effort, or pain, either keenly or slightly experienced. The word *oui* when it means a doubtful or complaisant "oui" (yes) is often inspirated, as in *non* (no) when uttered in a low and careless voice.

---

[1] L. Havet, **VI**, vol. ii, p. 221, Sacleux, **CXVIII**, p. 44.

[2] Rousselot, **CXV**, vol. i, p. 492, cf. also Loth, **VIII**, vol. xvi, p 201.

CHAPTER II

PHONETIC SYSTEMS AND THEIR TRANSFORMATIONS

THE number of possible phonemes is almost infinite. No musical instrument can emit sounds as varied as those produced by the human apparatus. But languages utilize by no means all the linguistic resources. On the contrary, the number of phonemes in each language is limited.

The number of phonemes in a language cannot, of course, be calculated by the number of signs in its alphabet. Languages generally have more sounds than signs. This is the case in French, Italian, English, and German. Yet, in the main, the number of phonemes hardly ever exceeds three score, and may even be considerably less.

Such an estimate need not astonish anyone; owing to the variety of sounds the human apparatus produces, they cannot be employed in too great a number in any one tongue without embarrassing the speaker. Besides, many of the possible sounds are mutually exclusive, owing to the conformation of the organs of speech.

In every language the phonemes are closely allied to each other. They constitute a coherent and closely knit system in which all the parts correspond. This is the first law of phonetics, and it is extremely important, for it means that a language is not made up of isolated phonemes, but of a system of phonemes.

Those who are acquainted with foreign languages are well aware that each language has a *phonetic system* peculiar to itself. In passing from one language to another, they do not carefully consider each word and adjust their organs to the correct position for producing the phonemes composing that word. In that way they would never succeed in speaking fluently. It suffices, in changing from one language to another, to adjust the organs, once for all, in a general way. If the foreign language they are speaking is a familiar one, there is an unconscious adjustment of the vocal organs by which all the phonemes conform to the new tongue. The polyglot is like a harmonium-player, who by changing his keyboard gives a particular value to each sound he produces. This adjustment can readily be seen in the fatigue experienced after speaking an unfamiliar language for any length of time The organs have been forced into new positions, requiring equally new muscular efforts. The exercise thus imposed upon them, if prolonged, causes fatigue very quickly. Those who wish to imitate a foreign pronunciation when speaking their own tongue know, moreover, that the only thing needed to produce the desired effect is what we might call a phonetic transposition When this transposition is achieved, the same page of French can give the impression that it is being read by an Englishman or a German.

The existence of a phonetic system is the result of a law of equilibrium. It establishes a kind of balance among all the organs which co-operate in a phonation by virtue of which to each position assumed by any particular organ there is a corresponding position for others. But the accord is not even limited to the position of the organs; it extends likewise to the muscular effort. Certain phonemes, for example, are pronounced with more breath than others, or with a greater articulatory effort. Besides, differences in quantity are usually bound up with differences of timbre.

In French, *a* and *o* generally differ in timbre according to whether these vowels are short or long. This can be seen, for example, in the pronunciation of *pâte* and *patte*, of *côte* and *cotte*, *saute* and *sotte*, etc. An analogous difference exists in German, between short *e* and long *e*, short *o* and long *o*; in *Stehen*, and *Reh* as opposed to *Stelle* and *retten*, or in *Sohn* and *Boden* as contrasted with *kommen*, *Gott*, etc It is the same with many other languages.

The phonetic system is far from stable throughout the development of any given language. This is intelligible when we stop to reflect upon the manner in which it is transmitted, and upon the conditions which maintain its equilibrium.

The system becomes fixed at an early age, and, apart from accidents which may affect the vocal organs, it tends to remain intact throughout life. But the apprenticeship is not completed at a single stroke. During the early years, which are of capital importance in the development of language, the child continually stores up from day to day words which he tries to reproduce just as he hears them. These are not individual sounds which he has learned to pronounce, but words or groups of words. Hence his organs must accommodate themselves to producing sound combinations which are sometimes exceedingly complicated. The child is rarely successful at the first attempt. He has to make the effort several times, correcting his pronunciation by reference to that of the people who speak to him, until he feels that he is able to reproduce exactly what he hears. The forms adopted permanently at the end of his apprenticeship constitute his phonetic system, which he establishes by successive trials by eliminating incorrect sounds and by making his vocal chords flexible enough for perfect execution.[1] The production of these movements finally becomes automatic. The vocal organs have a memory comparable to that of the pianist's fingers, which move mechanically over the keys as the eye follows the notation on the printed paper.

The transmission of pronunciation from one generation to another is discontinuous, in the sense that the child is forced to learn everything over again. During apprenticeship, doubtless, hereditary dispositions play some part, but it is not difficult to realize how many accidents may affect the integrity of pronunciation with each new generation. It rarely happens, indeed, that when its apprenticeship is ended the child's phonetic system is exactly like that of its parents. Some phoneticians even claim that this never happens.

In this interplay of complex movements which constitutes the phonetic system, the organ may either exaggerate or inhibit its action to a very slight extent. A muscle may be somewhat weak or slow in executing a movement or it may, on the contrary, be unusually vigorous and rapid. As a result there is a discrepancy between the phonetic systems of successive generations. This lack of agreement may be a very minor affair, and may not even be appreciable to the ear; nevertheless, it is serious in its consequences, for it means nothing less than a break in the continuity of the phonetic system. Sometimes, however, the discrepancy is clearly marked. The child articulates differently from its parents, and substitutes a different series of sounds for that which they possess. Thus a child who acquired the habit of pressing the tip of his tongue against the top of his alveolæ instead of placing it against the teeth, instead of pronouncing the French dentals would pronounce the English *t* and *d*

---

[1] Cf. the works cited at the beginning of the chapter preceding and also A. Meillet, **IX**, i, p. 311, and ii, p. 560.

This kind of phonetic change presents several very important features. In the first place it is *unconscious*. The child whose tongue goes either too far or not far enough is not aware of the excess or inadequacy of his efforts He thinks he is articulating like his parents when he is really articulating differently. It is the unconscious nature of the change which explains its permanence. The child would endeavour to correct himself if he were conscious of his mistake

Furthermore, the change is *absolute*. That is to say, that the change is complete and irremediable. It is not to be regarded as a spontaneous creation adding a new element to the system, but as the transformation of an existing element This transformation presupposes that the child is incapable of exactly reproducing a phoneme he has heard. It is rather striking that the phoneme abandoned for another is, of all the phonemes, usually that one which is foreign to the system: the one that is most difficult to articulate. No one has more difficulty in pronouncing a liquid *l* than the French of the present day, who have just lost it

Lastly, the change is *regular*, that is to say, its direction has been determined by previous changes This feature is explained by the nature of the elements which build up the equilibrium of the system. In all phonetic systems there are dominating elements which regulate the others In describing the system of any mode of speech, we can always account for all the peculiarities of that speech by reference to certain general principles of tongue-position, breathing-force, or muscular effort. Doubtless these general principles hold good only for a given time, since the system changes more or less from age to age, but at that particular moment they constitute the framework and skeleton of the language. From the point of view of the gradual evolution of the language, these general principles indicate its natural tendencies And, indeed, it has been proved, by comparing two different historical periods of a language, that the changes exhibited by the latter existed in germ in the earlier period.

The classic example of regularity in phonetic changes is the Germanic "sound-shifting", called in German, *Lautverschiebung*.[1] This phenomenon is found in other languages besides the Germanic: in Armenian for example, and Ossetic. The initial cause of the development lies between pronunciation with the glottis closed, and a pronunciation with the glottis open (see p. 31).

When a certain race is accustomed, like the Germans, to speaking with the glottis open, the sonant and surd occlusives are subjected to a series of alterations, due to a delay in the starting of the glottal vibrations (see p. 31). On the one hand, in a group such as *da* or *ba*, as the vocal chords do not begin vibrating immediately upon the implosion, a more or less large part of the consonant becomes surd, and there is finally a tendency to change the entire sonant into a surd. On the other hand, in a group such as *ta* or *pa*, between the explosion of the occlusive and the production of the *a* which follows, there is a more or less short interval. But the explosion allows the air free passage. Hence there is a natural tendency to change the occlusive into an aspirate or even into a fricative, particularly if the explosion is violent and if the organs, despite the abrupt rush of air that is seeking to escape, do not immediately return to a position of rest. We then get the pronunciation *tha*, *pha*, or even *tsa* or *pfa*. If the rush of air renders the occlusion incomplete, the natural tendency for aspirates and fricatives is towards the spirant (*þa*, *fa*).[2]

The two processes we have just explained play a considerable rôle in the history of the Germanic languages. It is these which account for the fact that the Indo-European sonant occlusives always correspond to the common Germanic surds (Gothic *skapjan* "to shape", *itan* "to eat", Old High German *melkan* "to milk", as compared with the Latin *scabo*, *edo*, *mulgeo*), and the surd occlusives always correspond to spirants (Goth. *hlifan* "to fly", *þahan* "to be quiet", as compared with the Greek *κλέπτω* Latin *taceo*). These are the only two shifts characteristic of Germanic.[1] But the spirant developing from the surd occlusive is not always surd, there are cases where it appears as a sonant. The Danish linguist Verner accounted for this by showing[2] that it became a sonant only in words where the following syllable bore no accent in Indo-European.

---

[1] The interpretation of this phenomenon given here is that generally approved by French linguists (Meillet, **XCV**, p. 27; Gauthiot, **VI**, vol. xi, p. 192; Vendryes, **XCIX**, p. 130). It is not admitted by everyone, cf. now Wundt, **CCXXIII**, i, 2, p. 405; H. Meyer, **XXXV**, vol. xlv, p. 107 ff.; Hirt, **CLXVII**, p. 615; S. Feist, **XXVI**, vol. xxxvi, p. 307, and xxxvii, 112.

[2] The sign *þ* indicates the dental and spirant heard in the English *think* or *thank*.

In fact a certain number of different tendencies cut across the interplay of the sound-shifts. For example, in several other languages, the spirant surds become sonants in intervocalic positions (Verner's discovery serves only as a corrective test to this general one). There is another tendency, according to which the sonant spirants, by a sort of rebound upon the speaker, react against the weakening they have undergone and become sonant occlusives. The second case has taken place in German. Thus the corresponding German words for the English *thin*, *thumb*, and *thorn* are *dünn*, *Daumen*, and *Dorn*, which were initially spirant before they became occlusive. This evolution is most clearly seen in the case of the dentals. It even extends sporadically outside the German field (English *gold*, *wild* as compared with the Gothic *gulþ*, *wilþeis*). Several other spirants show the same evolution in this respect[3], thus in several dialects initial *w* becomes *b* (*bas* for *was*, or *beil* for *weil*), or *j* becomes *g* after *r* (*Ferge* "pilot", *Scherge* "sergeant", both developments from the primitive *verjo*, *scerjo*).

These examples show that all the changes which Germanic consonants have undergone cannot be ascribed to a single law. It is remarkable, however, that throughout all the changes resulting from special conditions, the general tendency which manifested itself in prehistoric shifts continued to make itself felt throughout the history of Germanic languages; thus about the sixth century of our era, after Old High German had achieved its second sound-shifting, modern German, at least in the southern districts, had begun to prepare a third; in another section of the field, the Danish language, a new shift is actually now in the process of development.[4]

A phenomenon like sound-shifting, which is a good example of regularity and continuity demonstrates at the same time that phonetic changes can often extend to a very large part of the population. In order to appreciate the nature of a change it is not sufficient merely to compare the child's pronunciation with that of its parents, that is to say, merely to consider an isolated individual in each generation. The only change which counts for anything in the eyes of a linguist is that which occurs in the speech of a whole group of individuals.

---

[1] The Germans, followed by the linguists of other countries, generally call the laws of the Germanic sound-shifting *Grimm's Laws*, although they were discovered before Jacob Grimm by the Dane Rask, cf. Pedersen, **CCXXX**, p. 52 ff.

[2] In a celebrated article, **XXXVII**, vol. xxiii, p. 97.

[3] Behagel, **CXLIV**, pp. 201, 204.

[4] Braune, **XXVI**, vol. xxxvi, p. 564.

The greatest phonetic changes take place during the passage from one generation to another. We have still to determine what relation individual changes and general changes bear to all the children of one generation. It may happen that a child, because of a congenitally defective constitution, is incapable of pronouncing certain sounds, and has, in other words, a defective pronunciation. These individual defects are generally interesting only to the physician. All the same, they may be of service to the linguist in indicating the phonetic tendencies of a language. Sometimes, indeed, they only consist in the exaggeration of a natural tendency. They are then symptomatic, in the sense that they betray the weak points in a phonetic system. They show at what place resistance is weakest, and in what direction new phonetic tendencies threaten to lead the language. This work, however, requires great circumspection on the linguist's part, and in general it is best to leave it outside the field of our investigation; more than one individual must be studied in order to recognize a tendency.

For a long time it was believed that all phonetic changes started from an individual and were only individual changes generalized. This conception is incorrect. No individual could have the power of imposing upon his fellows a pronunciation against which their instinct would rebel. There is no force capable of generalizing a phonetic change. In order that a phonetic change may become general for a social group, all the members of the group must possess a natural tendency to adopt it spontaneously.[1] To attribute this to imitation is here beside the point. An aberrant pronunciation brings its author no disciples, and generally only tends to make him ridiculous.

We might here protest that fashion is the determining cause, and this cannot be denied in certain cases. We know that in imitation of the Beauharnais family who followed the creole custom, and did not pronounce the *r*, aristocratic society of the Directoire Period affected the elimination of this consonant This was the fashion of the *incoyables*, which did not last long, and left no traces except in the legends of prints and in almanacs Antiquity has known similar freaks of fashion Alcibiades was in the habit of pronouncing *r* as *l* (Aristophanes, *Wasps*, 44-6), and his son thought it proper to imitate him (Archippos, mentioned by Plutarch, *Life of Alcibiades*, 41) Catullus makes fun of a Roman of his day called Arrius, who in imitation of the Greek aspirated the Latin *c*, pronouncing *commoda*, for example, as *chommoda*.

---

[1] Meillet, IX, I, p. 311; II, p. 860, and II, vol. IX, 595.

These are exceptional cases which, properly understood, only confirm the rule. Indeed, it will be observed that these phonetic changes have not come to an end. The Latin peoples continue to pronounce their *c* as an occlusive, and the history of *c* in the Romance tongues does not appear to have been interfered with by the fashion which Arrius represents. The particular pronunciation of this snob has remained foreign to the phonetic system of the Latins True, it may have persisted for a longer or shorter time in some isolated words. This would no longer be a matter of phonetics, but only of vocabulary. Moreover, the question arises whether this mania ridiculed by Catullus was not at bottom a mere matter of vocabulary It is hardly likely that Arrius changed every *c* in his language to *ch*, that is to say, systematically substituted one articulation for another. All he did was apparently to introduce *ch* in place of *c* in certain words to make them seem like the Greek.

The case of the *incroyables* is quite different, for they introduced into normal French, the French of Paris, a peculiarity of pronunciation belonging to another French dialect, that of the creoles of Martinique. The elimination of *r* in French, however, seems to conform to a general tendency of the language, at least in so far as the guttural *r* characteristic of Parisian French is concerned. In certain positions, at the end of a word, after a consonant, and even in an intervocalic position, this *r* is scarcely recognizable to-day But for the influence of scholarship and traditional literature, perhaps it would already have disappeared. The English alveolar *r*, articulated in quite a different place, is likewise gradually disappearing and many English people, perhaps without being aware of the fact, pronounce it no longer.

It is customary, in comparative philology, to express phonetic changes in the form of *laws*.[1] Such is the so-called "Grimm's law" of the Germanic sound-shifts. We may already estimate the value which should be attached to the word "law", from the foregoing. An utterance which has become famous in philology proclaimed that "phonetic laws work blindly and with a blind necessity", *die Lautgesetze wirken blind, mit blinder Notwendigkeit.*[2] This utterance, which provoked violent polemics in its day, now inclines us rather to smile. The very least we can say of it is that it is somewhat rash, as it gives to phonetic laws an altogether unwarranted authority. Phonetic law is not a constant principle, and it is not, in the scientific sense of the term, a "necessity". It is the abuse of the term "law" that has here led to error.

Laws are made to control the actions of men, and, consequently, are oriented towards the future; thus penal law regulates the fate of the guilty, and civil law dictates the behaviour of citizens. It is unfortunate that the word law has been stretched to embrace natural principles, which have been established by experience, as in physics or chemistry. Such an extension has been favoured chiefly by the fact that in these sciences experiment shows a constant relation between phenomena, so that law, which is a simple statement of relationships, gives us the impression of preceding the experiments, when in fact it only follows them. It is an abuse of language, however, to attribute an imperative character to "law" used in this sense.

Phonetic laws can in no way be assimilated to those of physics and chemistry. The link uniting two successive states of a language is a circumstantial and not a natural one. We cannot anticipate a priori how a particular sound will develop, because into the evolution of sounds, there always enters a varying number of unknown factors Nevertheless, as a formula expressing changes that have taken place in the past, phonetic law is absolute. This character results from the general coherence of the phonetic system and the regularity of the changes (see p. 37) that take place. As these affect articulation as a whole, rather than isolated words, all words involving the same articulation become altered in the same way Therein lies the only principle of phonetic law. Such laws are simply formulæ which sum up processes and rules governing correspondences.

---

[1] Cf. the bibliography in van Ginneken, **LXXVII**, p. 462, and especially Meillet, "Les lois phonétiques," **IX**, vol. 1, p. 311; Wechssler, *Gibt es Lautgesetze?*; B. Delbrück, "Das Wesen der Lautgesetze", **XXIV**, I, 277-308 (1902); J. Vendryes, "Réflexions sur les lois phonétiques" (**XCIX**, 115-130 (1902)), and Baudouin de Courtenay, **CXLII**.

[2] This was said by the German linguist, Hermann Osthoff (1878). The existence of phonetic laws was not demonstrated as a principle between 1870 and 1880. Cf. Schuchardt, **CCIV**.

These phonetic laws, then, enable us to include in certain formulæ the history of the sounds which occur in any language, and provide us with a key to the changes they have undergone. If we know a word in a given language whose form can be accounted for by a phonetic law, we also know the forms of all other words in that language coming within the range of that law. Given two dialects sprung from one language and following a definite law, a knowledge of that law will reveal the phonetic principles involved in each of the dialects If I know that German has substituted an initial *z* for the original *t* preserved in English, I at once understand why I find the form *Zahre* in one as opposed to *tear* in the other; but I understand also the opposition of *zehn* to *ten*, *zwingen* to *twinge*, *Zunge* to *tongue*, etc. One of these words enables us to predict the other. It happens occasionally that philologists have reconstructed a priori the form of some non-existent word, and have been subsequently justified by the discovery of a new text containing that word. Phonetic laws are the basis of all etymological research. Any etymologist who ignored them would labour in vain.

It is easy to demonstrate, likewise, how these laws aid in the study of foreign languages. In learning a new language it is of great assistance to know the rules governing sound-correspondence between this language and those we already know Thus, if I know that Spanish changes the initial Latin *f* to *h*, I know that "faire" is *hacer*, "farine" *harina*, "foin" *heno*, "fer" *hierro*, "fils" *hijo*, "feuille" *hoja*, "fumée" *humo*, etc. There is a kind of *flair* which guides the memory in such cases, and which at need will substitute the proper form with some guarantee of correctness. Possibilities of error none the less exist. Mistakes may even arise from an inopportune or exaggerated application of phonetic laws (such as in *hyper-dialectism* or *hyper-urbanism*, discussed on p. 49). In the foregoing case it would lead to error, for instance, to attempt an a priori reconstruction of the Spanish word for fire along the lines of the correspondence between the latin *focus*, the Italian *fuoco*, and the French *feu*. The true form is *fuego*, and not *huego*, because initial *f*, in Spanish, does not change into *h* before *u* where there is a hiatus. The Gascon dialects go even further in this respect than Spanish; they have *huek* for " feu " and change initial *f* into *h* in every position.[1]

The linguist's first consideration, therefore, must be to define exactly the conditions in which phonetic law applies, and its extension in space and time.

In fact, phonetic changes are limited in time. Once the change has affected all those words on which its action is possible, the law expressing that change becomes null and void. The language may recreate new combinations altogether similar to those previously affected by the change, but these combinations will now remain without modification. They are said to be no longer subject to the law. Thus all languages have doublets representing words from identical sources introduced into the language at different periods. The oldest forms can be recognized because thay have undergone greater modification due to the influence of phonetic changes which operated no longer at the time when the more recent forms were introduced. In French there are the words *avoué* and *avocat*, *loyal* and *légal*, respectively derived from the same Latin prototypes. When these second forms came into the French language by a different route, however, from the first, the phonetic changes which had brought about alterations in the earlier forms had long since ceased to be operative.

It happens likewise that the formulæ of correspondence established between certain languages are sometimes contradicted by forms that have been borrowed from another language. German has *ss* for the single or double medial *t* in English, so that they have *besser* instead of *better*, *wasser* instead of *water*. But the two languages have the same word in *butter*, and the German *Messe* is in English *mass* (as in Christmas, Lammas), both of which contradict the preceding law in different ways. The reason is that *butter* and *mass* (*Messe*) are both borrowed from Latin.

---

[1] Cf. Meillet. *Linguistique historique et linguistique générale*, **XLII** (1908), p. 5.